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MENTAL REPRESENTATIONS OF SOCIAL VALUES

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Contents

1. Overview	2
2. Conceptualizing and Operationalizing Values	3
3. Moving to Values as Mental Representations	8
4. The System Level	11
4.1. The accessibility of values from memory	11
4.2. Judgments of values in rhetoric	12
4.3. Effects of values on feelings of ambivalence	14
4.4. Effects of value priming	15
4.5. Value change	17
4.6. Summary of the system level	18
5. The (Abstract) Value Level	19
5.1. The primacy of affect in values: Values as truisms	19
5.2. The component facilitation test	21
5.3. Values as self-guides: Dejection versus agitation	22
5.4. Summary of the value level	23
6. The Instantiation Level	24
6.1. Effects of value elaboration	25
6.2. The effects of typicality	27
6.3. Summary of the instantiation level	29
7. New Horizons	30
7.1. Cross-cultural differences	30
7.2. Methods of value measurement	31
7.3. Values, goals, attitudes, and traits	32
7.4. Values and the self	34
7.5. Values and moral judgment	34
8. Coda	36
Acknowledgments	36
References	36

Abstract

Many well-known psychological theories on diverse processes (e.g., moral and political judgment, prejudice, the self) ascribe vital roles to social values, but define values vaguely. The psychological functioning of values can be clarified by conceptualizing them as mental representations that operate at a system level, (abstract) value level, and an instantiation level. At the system level, values reflect motivational tensions described within Schwartz's [Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology*, 25, 1–65] circular model of values. These tensions are evident in correlations between values, the accessibility of values from memory, judgments of value coargumentation in rhetoric, feelings of ambivalence toward others, effects of value priming on behavior, and patterns of value change. At the value level, values are more strongly connected to feelings than to past behavior or beliefs, and the types of emotion depend on the values' roles as ideal versus ought self-guides. At the instantiation level, contemplation of concrete, typical instantiations of a value increase value-affirming behavior by affecting perceptual readiness to detect and apply the value. All three levels of representation are crucial for addressing key puzzles in the role of values in social psychological processes.

1. OVERVIEW

“The United Nations must provide a framework of shared values and understanding...”

Kofi Anan's Speech to the United Nations General Assembly,
New York, September 24, 2001

In his statement following the terror attacks on September 11, 2001, the United Nations' (UN) Secretary-General curtly repeated an aim that has been central to the UN since its formation after World War II. From the first sentence of its historic Universal Declaration of Human Rights to its present-day activities, the UN's pursuit of “shared values” is an immense project. Whether this aim is achievable or not (see, e.g., [Fish, 1999](#); [Mackie, 1977](#)), the importance of human values has been evident to scholars throughout history. Philosophers from [Aristotle \(1959\)](#) through [Kant \(1949\)](#) to contemporary thinkers like [Dworkin \(1985\)](#) have contributed provocative discussions of values. The field of bioethics increasingly utilizes the concept ([Kuhse & Singer, 2006](#)), and many of the social sciences have had a long-standing interest, including the fields of history ([Berlin, 2001](#)), economics ([Ben-Ner & Putterman, 1998](#)), and sociology ([Inglehart, 1997](#)).

Within psychology, theories about diverse processes note the importance of values for predicting human behavior. Values have been highlighted in

clinical theories of anxiety and depression, with the notion being that these illnesses can arise from unrealistic values and standards that people create for themselves (e.g., Beck et al., 1979); theories of emotion and self-regulation have suggested a complex, social connection between values, motivation, and emotion (Johnson-Laird & Oatley, 1992; Keltner & Haidt, 1999; Lawrence et al., 2002); theories of individual differences in goals and personality traits cite basic relations with values (Grouzet et al., 2005; Hofer et al., 2006; Roberts & Robins, 2000). In addition, values are relevant to theories of moral reasoning, moral development, and decision making (Kristiansen & Hotte, 1997; Rohan & Zanna, 1997; Tanner et al., 2008).

Values are relevant to a number of major social psychological theories in particular. Well-known examples include self-affirmation theory (Steele, 1988), terror management theory (Greenberg et al., 1997), the value-pluralism model (Tetlock et al., 1997), and several value-based theories of prejudice (Katz & Hass, 1988; Pratto et al., 1994; Sears, 1988). In these influential theories, researchers have emphasized the importance of values for particular consequences, such as feelings of self-integrity and prejudice. Notwithstanding the progress afforded by these theories, they are limited by a tendency to treat values as a single generic category to describe important ideals, with no defined differences between them. In short, the theories use values as a placeholder term for some psychological quality that is not richly defined.

There is now ample potential to incorporate a more advanced understanding of values. Almost 20 years ago, a chapter in *Advances in Experimental Social Psychology* provided an important step toward addressing these limitations. Schwartz (1992) built on prior models of values (Allport et al., 1960; Feather, 1975; Kluckhohn, 1951; Rokeach, 1968) by proposing a theory that described their connections to basic motives and to each other. This model made it easier for researchers in various labs (including my own) to unearth more information about the psychological functioning of values. From the point of view of my research program, the model helped to provide a context for a closer examination of mental representations of values. This chapter describes the important strides that have been made.



2. CONCEPTUALIZING AND OPERATIONALIZING VALUES

Before describing the recent progress, it is important to consider perspectives on the conceptualization and operationalization of values. Notwithstanding a long history of diverse perspectives on values (Rohan, 2000), social psychologists tend to define them as abstract ideals that are important guiding principles in one's life (Allport et al., 1960; Feather, 1975; Kluckhohn, 1951; Rokeach, 1968; Schwartz, 1992). Frequently

studied examples include equality, freedom, and helpfulness. People tend to consider such ideals to be highly important, both as prescriptive principles and as intrinsically valuable ideals. That is, we are both internally and externally driven to fulfill them. As a result, measures of values typically contain only those ideals that are at least somewhat important to most individuals.

Allport et al.'s (1960) "Study of Values" was the first well-known attempt to describe and measure values, as noted above. Allport et al. proposed the existence of six value types: social, theoretical, economic, aesthetic, political, and religious. Each value type describes a kind of future activity that people might wish to perform. For example, social values entail helping people and occupations such as social work, and theoretical values involve the search for truth and occupations such as scientific study.

Although the Allport et al.'s (1960) model and the measure it yielded has been very useful for enhancing occupational psychologists' understanding of vocational choice (Kopelman et al., 2003), Rokeach (1973) argued that it was principally an assessment of subtle likes and dislikes and attitudes toward occupations. He added that values are more like idealized standards that have an "ought" character. Rokeach devised a list of 36 values based on pilot work asking respondents to describe their values and an examination of value-like trait words in the English language (Anderson, 1968). Rokeach stressed that relative differences in value importance are more psychologically meaningful than the importance of any single value considered on its own. For instance, he noted that most people tend to say that equality (i.e., equality of opportunity) is important, but what matters more is whether they view equality as being more or less important than other values, such as freedom. Lower relative importance of equality predicts more discriminatory attitudes and behavior than higher relative importance of equality (Rokeach, 1973). Rokeach (1973), therefore, used an approach that asked participants to rank order values in terms of their importance. Abundant subsequent research has used this procedure or a method that involves selecting the most and least important values from a list (e.g., Lee et al., 2008; Steele & Liu, 1983; Tetlock, 1986).

Perhaps the most important missing ingredient in the Allport–Vernon–Lindzey model and Rokeach's theory was a description of how diverse values are related to each other. Schwartz's (1992) circular model of values examines this issue. According to this model, values are self-imposed criteria that help us to maintain a delicate balancing act between basic motives that arise from our needs as individuals and as members of larger social groups. Schwartz proposed that these motives can be organized along the two dimensions depicted in Fig. 1.1. One dimension opposes motives to promote the self against motives that transcend personal interests to consider the welfare of others. The *self-enhancement* end of this dimension includes values that promote achievement and power, whereas the *self-transcendence* end

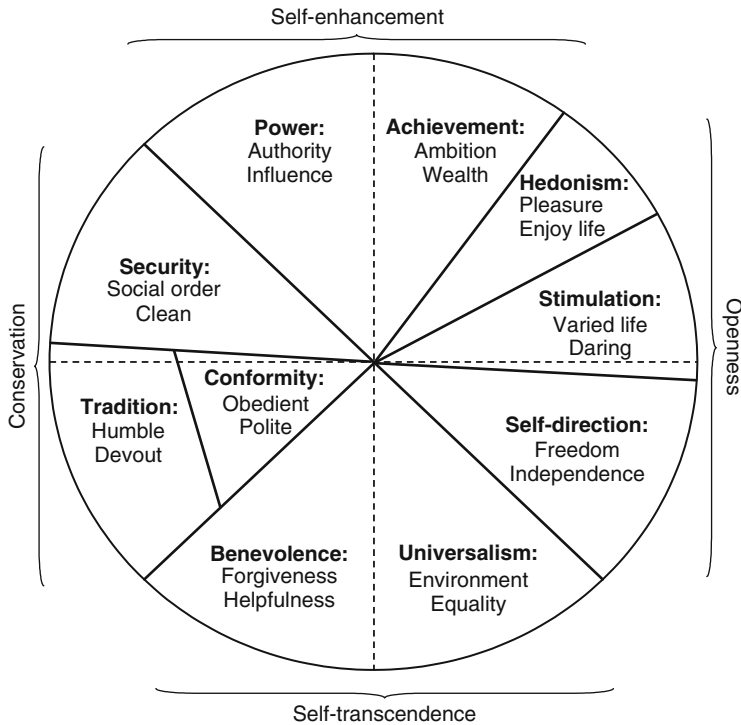


Figure 1.1 Schwartz's (1992) circular model of values.

includes values that promote benevolence and universalism. Orthogonal to this dimension is one that opposes needs to follow the status quo and needs to pursue personal intellectual and emotional interests in uncertain directions. The *conservation* end of the dimension includes values that promote tradition, conformity, and security, whereas the *openness* end includes values that promote self-direction and stimulation. As shown in Table 1.1, Schwartz proposed that these motives are expressed by 56 values, which expanded on the list produced by Rokeach.

It is impractical to assess this large number of values using the ranking procedure advocated by Rokeach. Instead, Schwartz's Value Survey (SVS) followed Gorsuch's (1970) suggestion to employ a quasi-unipolar rating scale that offers more rating points between differing levels of importance (see also Braithwaite & Law, 1985). Schwartz's (1992) Value Survey asks participants to rate these values on a 9-point scale with labels at -1 (opposed to my values), 0 (not at all important), 3 (important), 6 (very important), and 7 (extremely important). This approach is further supported by evidence that differentiation in ratings helps to improve their prediction (Alwin & Krosnick, 1985; Krosnick & Alwin, 1988) and that rankings can

Table 1.1 Schwartz's (1992) 10 value motivations and the values that express them

<i>Power:</i> Social status and prestige, control or dominance over people and resources (social power, wealth, authority, preserving my public image).
<i>Achievement:</i> Personal success through demonstrating competence according to social standards (successful, ambitious, capable, influential).
<i>Hedonism:</i> Pleasure and sensuous gratification for oneself (pleasure, enjoying life).
<i>Stimulation:</i> Excitement, novelty, and challenge in life (varied life, daring, exciting life).
<i>Self-direction:</i> Independent thought and action choosing, creating, exploring (creativity, freedom, independent, curious, choosing own goals).
<i>Universalism:</i> Understanding, appreciation, tolerance, and protection for the welfare of all (broadminded, wisdom, a world of beauty, equality, unity with nature, a world at peace, social justice, protecting the environment).
<i>Benevolence:</i> Preservation and enhancement of the welfare of people with whom one is in frequent personal contact (honest, loyal, helpful, forgiving, responsible).
<i>Tradition:</i> Respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provide the self (respect for tradition, humble, accepting my portion in life, devout, moderate).
<i>Conformity:</i> Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms (self-discipline, obedient, politeness, honoring of parents and elders).
<i>Security:</i> Safety, harmony, and stability of society, of relationships, and of self (family security, national security, reciprocation of favours, social order, clean).

Note. The values expressing each motive are shown in parentheses.

force illegitimate distinctions (Maio et al., 1996). In addition, several studies have manipulated or measured social desirability bias and found that it poses less of a problem for both methods of value measurement than might be imagined (Kelly et al., 1972; Schwartz et al., 1997). Social desirability is partly controlled in measures that elicit high-value differentiation, because they assess values relative to each other. Thus, the utility of the differentiated rating method appears comparable to that obtained from rankings.

Overall, the most important feature of the model is the way in which the values relate to each other. That is, values that are adjacent in the circumplex (e.g., exciting life and varied life) should tend to have similar correlations with other values, whereas values that are at opposing ends (e.g., exciting life and self-discipline) should tend to have opposing patterns of correlations with other values. As a result, endorsements of the importance of adjacent values will often be positively related, endorsements of orthogonal values will often be smaller or unrelated, and endorsements of opposing values

should be negatively related. This pattern reflects the predicted conflicts and compatibilities among the motives served by the values and is noteworthy because, in past models, there were few predictions about which values are more likely to conflict and why. The exceptions to this neglect focused on only a few values at a time (e.g., the equality-freedom model of ideology proposed by [Rokeach, 1973](#)).

Using the SVS, analyses of patterns of correlations between values in over 70 countries have supported the circular predictions of Schwartz's model (see [Schwartz & Rubel, 2005](#)). In addition, research using the SVS has supported the circular model by revealing *sinusoidal* pattern of relations between different values and other constructs, such as attitudes and behavior. That is, if the model is valid, then any construct that is strongly related to one set of values should tend to be negatively related to the opposing set of values (or weakly related), with relations to orthogonal values in between. A range of variables exhibit sinusoidal relations with the values in the circular model (e.g., [Bardi & Schwartz, 2003](#); [Feather, 1995](#); [Roccas et al., 2002](#)). These patterns provide important evidence that values reflect the latent conflicts and compatibilities predicted within the model.

Of interest, however, use of the SVS in large parts of Asia (e.g., portions of China, India, Malaysia), sub-Saharan African, and less developed nations has not been as supportive of the model ([Schwartz, 1992](#)). This pattern has left room for debate about the extent to which the model is valid across cultures. One argument in this debate is that the SVS makes it difficult to establish that respondents' interpretations of the abstract-level values are equivalent across cultures ([Peng et al., 1997](#)). Indeed, I view this problem as one of the key challenges that faces research on values. The abstract nature of values is vital to their conceptualization, but complicates their assessment. For example, equality can entail equality of outcomes or opportunities, and it could involve equality between races, genders, religions, or more atypical social categories (e.g., left handers vs. right handers). Which instantiations do people have in mind when they speak about a value, think about acting on it, or rate its importance in a survey?

Most measures and manipulations of values leave a lot of room for varied interpretations by the participant. For example, research on self-affirmation processes has asked participants to select which of [Allport et al.'s \(1960\)](#) six value types are most important to them, and these value types are all defined very abstractly ([Fein & Spencer, 1997](#); [Steele & Liu, 1983](#)). The SVS offers synonyms to somewhat narrow the meaning of values (e.g., equality is defined as "equality of opportunity"), but even this step might be regarded as insufficient to prevent substantive differences in construal. For instance, [Seligman and Katz \(1996\)](#) argued that the meaning of values varies across the contexts that people bring to mind. In addition, [Peng et al. \(1997\)](#) noted low criterion validity in cross-cultural comparisons of ratings and ranking measures, but the criterion validity was higher in a more specific measure

that recorded participants' responses to 26 behavioral scenarios that the researchers had constructed.

Peng et al.'s evidence gives impetus to other measures that identify behavioral scenarios relevant to values. For example, Allport et al.'s (1970) Study of Values identified particular situations or behaviors. According to Kopelman et al. (2003), the Study of Values was once the third most popular nonprojective measure of personality, but interest in it waned as the items became regarded as sexist and dated. These researchers, therefore, updated the behavioral and situational referents in a revised version of this measure. One item asks, "Do you prefer to develop friendships with people who (a) are efficient, industrious, and of a practical turn of mind? (b) are seriously interested in thinking out their attitude toward life as a whole? (c) possess qualities of leadership and organizing ability? (d) show artistic and emotional sensitivity?" Scores across items are used to provide an aggregate measure of the six values assessed in the Study of Values.

A similar approach has been used to create Schwartz et al.'s (2001) recent Portrait Value Questionnaire (PVQ), which can be used as an alternative or supplement the SVS (Schwartz, 1992). Initial use of the PVQ thus far has yielded stronger evidence of fit to the model in the countries in which it has been used, including Uganda and South Africa (Schwartz et al., 2001). Thus, it remains feasible that the Schwartz model provides a reasonable "prototype" for modeling value relations across cultures, despite some potential variability in the applicability of this "prototype" to different cultures.

3. MOVING TO VALUES AS MENTAL REPRESENTATIONS

Notwithstanding the attempts to provide more specificity in measures of values, it is clear that the abstract nature of values is essential to their conceptualization. Values are used at an abstract level in real-world contexts. Politicians, business people, lobbyists, and other social leaders exploit the breadth of values to garner agreement from diverse factions and individuals. It is difficult for most people to disagree with ideals like freedom and equality, so these ideals can act as useful catch-all categories that encompass numerous interests and mobilize support (Edelman, 1985). To understand this role of values, we need to learn more about them as they are perceived in the abstract.

The importance of this search is reinforced by evidence that people's ratings and rankings of the importance of abstract values matter. That is, ratings and rankings of them as abstract concepts significantly predict related judgments and behavior (Rokeach, 1973; Schwartz, 1996). Although the size of value-behavior relations has been small in many studies (Kristiansen & Hotte, 1997), there are inherent methodological problems when trying to

predict specific behaviors from an abstract concept (Ajzen & Fishbein, 1977). Perhaps more important is the fact that there is no reason for people to perceive strong connections between their values and *all* of their attitudes and behaviors: some attitudes serve to express values and many express other motives, such as utilitarian concerns, social adjustment, and ego-defense (Katz, 1960; Smith et al., 1956). Indeed, values' prediction of attitudes and behavioral intentions is significantly improved when people explicitly view their attitudes as being connected to their values (Maio & Olson, 1994, 1995, 2000). In fact, when people view their attitudes as expressing their values, personal value ratings predict relevant behavioral intentions *independently* of attitudes, subjective norms, and perceived behavioral control over the behavior (Maio & Olson, 1995, 2000). Thus, ratings of values at an abstract level can explain unique variance in behavior intentions.

However, the centuries-old philosophical debate about the use of moral principles in ethical reasoning makes it obvious that a focus on values at an abstract level cannot be sufficient for *complete* understanding of values. Values must implicitly refer to *something*. Freedom to kill means something different from freedom to live, and equality of outcomes means something different from equality of opportunity. People refer to values in ways that are abstract, but when applying them people must do so concretely.

The ability of values to be both abstract and concrete presents a fascinating challenge to research on values. My colleagues and I have attempted to meet this challenge by starting with the assumption that values' existence at abstract and concrete levels is best understood by explicitly regarding values as mental representations. The basic idea is that values are like other cognitive concepts and categories. They vary in breadth, concreteness, connections to other constructs, accessibility, and their applicability to other judgments, among other features. Consequently, we can learn a great deal about them by studying them in the same way that researchers have studied related constructs, such as attitudes and goals. At the same time, we must build in an explicit recognition of the role of abstraction within our examination of values.

As shown in Fig. 1.2, this entails studying mental representations of values at three levels: systems of abstract values, specific abstract values, and concretely instantiated values. The first, system level, incorporates the long-standing assumption that values do not exist in isolation from each other. As suggested by Rokeach (1973), the development and application of any one value should be intricately linked to the development and application of other values. Thus, it is vital that any examinations of values as mental representations begin with a search for signs of stable connections between values—as noted earlier, Schwartz's circular model provides an important basis for fulfilling this aim.

The level of specific abstract values is useful for discovering the extent to which abstract-value judgments are influenced by different types of

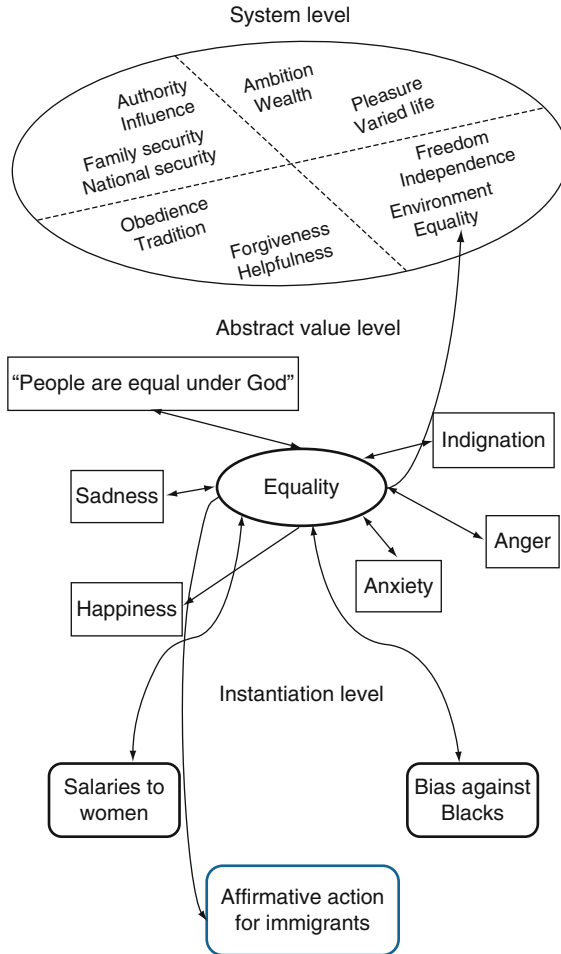


Figure 1.2 Levels of mental representation of values.

psychological information. It has been suggested that evaluative judgments in general are derived from our beliefs about the object of judgment, feelings about the object, and past behaviors toward it (Zanna & Rempel, 1988). Are mental representations of abstract values built to a greater or lesser extent on any one of these pieces of information? As described below, there is evidence to indicate that abstract values are weakly supported by cognitive information, but strongly linked to affective reactions.

Finally, the level of concretely instantiated values is useful for studying the process that occurs as values become more cognitively elaborate. This analysis would enable us to detect how people make the jump from concrete instantiations to value-congruent actions.



4. THE SYSTEM LEVEL

The evidence for sinusoidal relations between values and other constructs represented an important step toward understanding the mental representation of values at the system level, but the evidence relevant to understanding the mental representations of values at this level has expanded substantially in the 20 years since the circular model emerged. These gains have occurred by studying five important processes: (1) the accessibility of values from memory, (2) judgments of values in rhetoric, (3) effects of values on feelings of ambivalence, (4) effects of value priming, and (5) value change. In research on each of these processes, the focus has been on the role of values at an abstract level, without concrete instantiation. The experiments have tested whether the abstract values are processed in a manner that reflects a coherent mental representation of motivational conflicts and compatibilities, congruent with the circular model.

4.1. The accessibility of values from memory

The evidence for a circumplex pattern of correlations between value ratings is important, but limited in its ability to reveal latent mental representations of values in people's minds. One obstacle is that people's ratings of their values may be guided by their conscious theories of compatibility between them, similar to the way in which people use their implicit theories in autobiographical recall more generally (Ross & McFarland, 1988). These theories may or may not reflect the actual conflicts and compatibilities within the mental organization of values. Thus, it is important to examine the mental organization of values in a different way.

One approach involves testing whether the *speed* of judging the importance of a value is affected by its motivational relation to a previously presented value, in a manner consistent with Schwartz's (1992) circular model. Abundant evidence indicates that the speed of judgment after a prior judgment reflects the degree of association between the two judgments in memory (Fazio et al., 1986; Meyer & Schvaneveldt, 1971; Ratcliff & McKoon, 1981). Thus, if the circular model reflects the actual organization of values in memory, people should be faster at rating the importance of a value when it follows a value that serves a compatible or opposing motive than when it follows an unrelated motive.

Pakizeh et al. (2007) examined this question by asking participants to study values from the SVS (Schwartz, 1992). Participants were then shown pairs of values and asked to rate the importance of each value as a guiding principle in their lives, using keys labeled from 0 (not important to me) to 3 (extremely important to me). The presentation of the second value

occurred immediately after rating the first value, and a counting task was used as filler between each value pair. Multiple regression analyses of the time taken to rate the second value in the pair revealed that responses were faster when the value served a motivation that was congruent *or* incongruent with the motivation expressed by the first value. Of interest, Pakizeh et al. (2007) also found that this pattern remained reliable even after controlling for participants' separate ratings of the extent to which the values were related in meaning. Thus, the patterns of response facilitation between the abstract values may be driven more by access to underlying goals than by a parallel access to shared semantic associations.

Overall, then, the response latencies for pairs of values revealed a pattern of connections between values in memory. Values are strongly associated with values that serve congruent and opposing motives. Consequently, activating a single value may remind people of the (similar) importance of congruent values and the (dissimilar) importance of opposing values. As a consequence, value activation may exert a predictable pattern of effects on value-related attitudes and behaviors, as discussed below.

4.2. Judgments of values in rhetoric

Part of the reason for interest in values as abstract concepts is that this reflects how they are used in rhetoric. For instance, during the 2001 election in Britain, Prime Minister Tony Blair repeatedly and boldly stated that the election was not strictly about his governments' policies, successes, or failures; he insisted it was about values and whether people wanted to follow the values of his party or the values of the dreaded opposition. This bold focus on values reflects the dominant major rhetorical emphasis of most politicians.

Politicians often go a step further and use one value to support another—an approach that can be labeled as covalue argumentation. The use of covalue argumentation unites people as diverse as Plato, who stated that *equality* leads to *friendship* (Prangle, 1988), and Howard Greenspan (Associated Press, 1999), who stated that “*Honesty* leads to *success*” (italics added). It also appears to reveal points of conflict between major political ideologies. For instance, George W. Bush defended his capitalist policies by stating, “I will choose *freedom* because I think *freedom* leads to *equality*” (as cited in Anderson, 1999, italics added). In contrast, the 1847 manifesto of the Communist Party (Engels, 1847, as cited in Wheen, 1999) uses the value of equality to support freedom.

In each case, the values are presented abstractly, which makes the arguments broad in appeal and easy to defend. Nonetheless, this persuasive power should depend on recipients' mental representations of the connections between the abstract values. The arguments should seem less compelling when they cite values that are only weakly connected, because of low

motivational relevance to each other. The potential importance of motivational relevance is made salient by evidence for the well-documented “similarity” heuristic in inductive inference (Rips, 1975), whereby arguments seem stronger when they involve transfer between similar objects in premises and conclusion than when the objects involved are dissimilar. If the same process applies to values, then two values may be more persuasively linked when they are motivational congruent than when they serve orthogonal or incompatible motives. For example, it may be easier to believe that being ambitious (a self-enhancement value) promotes wealth (another self-enhancement value) than to believe that ambition promotes creativity (an orthogonal openness value) or honesty (an opposing self-transcendence value). Links between motivationally congruent values should be more compelling if the circular model accurately reflects people’s implicit theories about social values and behaviors. As a result, people may be more persuaded by recommendations based upon covalue argumentation involving similar values than by recommendations based upon covalue argumentation involving dissimilar (unrelated or opposing) values.

To test this reasoning, Maio et al. (2009b) exposed participants to arguments that endorsed a particular value (the “target value”) because it promoted another value (the “reason value”). For example, one statement suggested that creativity promotes curiosity:

“Research conducted by the Arts Council has found that increasing people’s creativity has beneficial effects. The studies found that encouraging people to be more creative increases their curiosity in new ideas and methods.”

Using Schwartz’s model, the covalue arguments included two values that fulfilled similar motives (i.e., from the same domain), orthogonal motives, or opposing motives. Participants then rated the persuasiveness of the arguments. As expected, participants were more persuaded by arguments involving similar value motives than by arguments involving values that served orthogonal or opposing motives. This pattern was reliable even after controlling statistically for participants’ previous ratings of the importance of each of the cited values in the covalue arguments. Moreover, this effect was strong enough to emerge even when the covalue arguments were presented within much more abundant text on political policy.

These results provide further support for the hypothesis that abstract values are mentally represented in a manner that reflects their compatibilities and conflicts. Values reflecting compatible motives were more persuasive when joined in argument than values serving orthogonal or opposing motives, congruent with evidence about the transfer of information between cognitive categories (Rips, 1975). Thus, mental representations of relations between values create a rhetorical cost when opposing values are used to support each other.

4.3. Effects of values on feelings of ambivalence

Researchers have frequently highlighted values as a vital origin of conflicted or ambivalent attitudes (Rokeach, 1973; Tetlock et al., 1997). For example, conflicts between values have been highlighted as a source of ambivalence toward abortion (Craig et al., 2002), homosexuality and gay rights (Brewer, 2003), political candidates (Feldman, 1988), racial minorities (Katz & Hass, 1988), eating meat (Berndsen & van der Pligt, 2004), and obesity (Crandall et al., 2001). In these instances, one value or set of values makes salient positive attitudinal elements, whereas another value or set of values makes salient negative attitudinal elements. For example, people may value both “freedom” and “sanctity of human life,” causing them to feel simultaneously favorable toward unrestricted abortions (in order to promote freedom) and unfavorable toward them (to protect sanctity of human life). The values pull their attitudes in opposing directions, creating feelings of conflict and indecision (Thompson et al., 1995; van Harreveld et al., 2008).

Values may also exert a different, counterintuitive effect on feelings of ambivalence if mental representations of connections between values follow the predictions of the circular model: values might pull an attitude in the same (e.g., positive) direction, while nonetheless eliciting feelings of ambivalence. For instance, we may experience feelings of ambivalence when we see a person who seems to possess two motivationally incongruent values (e.g., the person is “humble” and “ambitious”), but not when we see a person who seems to possess two motivationally congruent values (e.g., the person is “humble” and “polite”). The effect of incongruence should occur over and above any discrepancies in our evaluation of the two values as attributes *per se*. Imagine a person whose core values—humility and assertiveness—simultaneously remind you of two of your cultural heroes: Mahatma Gandhi and Muhammad Ali. It might seem impossible to feel ambivalent about this person, given that you perceive both values as positive attributes—the values don’t pull your attitude in opposite directions. Notwithstanding this intuition, the two values may create feelings of ambivalence because of their conflicting positions in our mental representations of the motivational connections between values.

Several experiments have tested this prediction (Gebauer et al., 2008). In these experiments, participants rated their feelings of ambivalence toward 20 different target-persons. The different target-persons were described as possessing a pair of values, which were randomly sampled (without replacement) from a set of 40 values from all of the domains in Schwartz’s (1992) circular model. For each target person, participants were informed that “the two values below are the most important guiding principles in the life of a person you know.” This sentence was followed by the presentation of the first pair of values. Participants then rated their feelings of ambivalence toward each person using a method similar to that used in past research

(Newby-Clark et al., 2002; Priester & Petty, 1996, 2001; Riketta, 2000). Specifically, participants indicated the degree to which they “feel ambivalent toward this person,” using a 7-point rating scale ranging from 1 (*not at all*) to 7 (*very much*). Above each item, felt ambivalence was explained as “referring to the coexistence of both, positive and negative emotions or attitudes (love and hatred), toward a person or thing at the same time.”

As expected, feelings of ambivalence were higher when the target-persons possessed values that were motivationally incongruent than when the values were motivationally congruent. Moreover, this effect remained significant even after controlling for participants’ perceptions of the valence of each value as an attribute of a person (from very negative to very positive). Thus, the effect of motivational incongruence was not attributable to differences in evaluations of the values.

This set of experiments shows how mental representations of motivational conflicts between values help to explain why we might feel ambivalence rather than admiration toward people who manifest values that we cherish. When the values are motivationally incongruent, we sense that they don’t “fit” and any admiration is undercut. This effect is somewhat paradoxical because life is full of instances when we must seek a balance between motivationally incongruent values, as noted elegantly by (Schumacher, 1977, p. 127):

“In the life of societies there is the need for justice and also the need for mercy . . . Only a higher force—wisdom—can reconcile these opposites. . . . Societies need stability and change, tradition and innovation, public interest and private interest, planning and laissez-faire, order and freedom, growth and decay: everywhere society’s health depends on the simultaneous pursuit of mutually opposed activities or aims.”

If we were to recognize the “higher force wisdom” that Schumacher describes, we wouldn’t be so perturbed by individuals who attempt to fulfill the motivationally incongruent aims. Our default mental representations of values make it difficult for us to apply this wisdom.

4.4. Effects of value priming

Mental representations of motivational interconnections between values have powerful implications for understanding the effects of priming (i.e., activating) values on subsequent behavior. Specifically, mental representations of relations between values should lead to effects that go beyond behavior that is directly relevant to the primed value. This hypothesis can be understood by considering past experiments that made salient the ideals of achievement and helpfulness. Results indicated that participants were better at solving word puzzles if they first read an article that reminds them of the importance of achievement (Bargh et al., 2001). Similarly,

participants were more helpful toward an experimenter if a prior task made them mindful of the importance of helpfulness (Macrae & Johnston, 1998). Similar effects have been obtained in other research that primed social value constructs (Roccas, 2003; Verplanken & Holland, 2002).

If values are mentally represented in a circular structure that reflects their motivational interconnections, then priming an abstract value should activate the compatibilities and conflicts within the whole system. The pursuit of values that serve the same motives should be enhanced, and the pursuit of values that serve opposing motives should be thwarted. For example, if the value of achievement expresses a self-enhancing motive, as predicted by the circular model, then any intervention that activates achievement should promote self-enhancing behavior (e.g., success at a puzzle). At the same time, such an intervention should decrease the performance of behavior that serves opposing motives, such as benevolence toward others (see Fig. 1.1).

This prediction is powerful because it entails wide-ranging effects of abstract-value primes based on the mental representation of their compatibilities and conflicts. The priming experiments cited above did not enable complete demonstrations of this possibility because they did not test whether priming a value increases the likelihood of performing a behavior that supports the same motivation while simultaneously decreasing behavior that supports an opposing motivation. This issue was addressed by a series of experiments that primed values from around the circular model (Maio et al., 2009d). One of these experiments came back full-circle to the aforementioned effects of priming achievement and helpfulness (Bargh et al., 2001; Macrae & Johnston, 1998). Specifically, it recorded the effect of priming achievement values (e.g., success, ability) and benevolence values (e.g., helpfulness, loyalty) on behaviors that promoted achievement and benevolence. In the circular model, achievement and benevolence values are opposing: benevolence values preserve and enhance the welfare of others, whereas achievement values emphasize personal success. The achievement behavior in this experiment involved completing word puzzles, as in the research conducted by Bargh et al. (2001). The benevolence behavior involved freely volunteering (without obtaining payment or course credit) to help the researcher complete an additional experiment, as in research conducted by Maio et al. (2001).

As expected, participants exhibited more behavior supporting the primed values than did participants in the control condition and in the condition that primed the opposing values. Specifically, participants in the achievement condition exhibited more achievement behavior than participants in the benevolence condition, with the control condition in between. In contrast, participants in the benevolence condition exhibited more benevolence behavior than participants in the achievement condition, with the control condition in between.

Similar patterns were revealed in experiments that primed values along the dimension from openness to conservation, using behavioral measures of curiosity, cleanliness, and humility (Maio et al., 2009d). Across these experiments, priming a set of values increased behavior that affirmed the values, while it decreased behavior that affirmed a set of opposing values. The consistency of this pattern across diverse behaviors is important because there is no single behavior that is perfect for assessing each value-relevant motive. The consistent pattern provides compelling support for the hypothesis that values are mentally represented in terms of their latent motivational conflicts with each other, as predicted by the circular model of values (Schwartz, 1992).

4.5. Value change

If our mental representations of values encompass the motivational conflicts and compatibilities between them, then changes in the importance attached to any particular abstract value should cause systemic changes throughout the whole value system. When a value becomes more important, values that we regard as serving the same motives should also become more important, while values that we regard as serving conflicting motives should become less important. For example, if the value of freedom expresses a self-direction motive, as predicted by the circular model, then any event that causes individuals to increase the importance of freedom should cause them to increase the importance of other values that similarly promote self-direction (e.g., curiosity). At the same time, such an event should decrease the importance of values that express opposing motives (e.g., humility), but have no effect on values promoting orthogonal motives (e.g., wealth). Evidence for such a systemic pattern across diverse values would be important, because it entails wide-ranging effects of value change based on our mental representations of the latent compatibilities and conflicts between them.

Although past research has examined numerous effects of value change (Cileli, 2000; Inglehart, 1997; Klages, 2005; Sheldon, 2005; Verkasalo et al., 2006), these systemic implications have been examined only very recently. Maio et al. (2009d) examined this issue using Rokeach's (1973, 1975) well-known value-self-confrontation paradigm. In this paradigm, participants rank the importance of diverse values and then receive feedback that their peers attach much more importance to one or some of the values. This feedback causes participants to feel dissatisfied with themselves and feel "hypocritical" (Rokeach, 1975), and they reduce this negative feeling by changing their value priorities. In Maio et al.'s experiment, participants were asked to rank the importance of 16 self-transcendence, self-enhancement, openness, and conservation values (with four values of each type). After ranking the values, participants were given value-self-confrontation feedback

that promoted the self-transcendence, self-enhancement, openness, *or* conservation values. Participants then ranked a different set of self-transcendence, self-enhancement, openness, and conservation values.

As expected, value-self-confrontation support for a specific set of self-transcendence values increased the importance of other (different) self-transcendence values, decreased the importance of self-enhancement values, and had no effect on openness and conservation values. In addition, support for the first set of self-enhancement values increased the importance of other self-enhancement values, decreased the importance of self-transcendence values, and had no effect on openness and conservation values. Also, value-self-confrontation support for the first set of openness values increased the importance of other openness values, decreased the importance of conservation values, and had no effect on self-transcendence and self-enhancement values. Finally, support for the first set of conservation values increased the importance of other conservation values, decreased the importance of openness values, and had no effect on self-transcendence and self-enhancement values.

These findings are provocative because they include numerous changes in values that were not targeted by the manipulation. This pattern goes far beyond the prior evidence demonstrating changes in a target value alone. The pattern of findings relies on considerable mental leaps across values—leaps that rely on participants' mental representations of compatibilities and conflicts between values. Moreover, recent evidence has shown that these leaps are not restricted to simple one-time laboratory experiments that measure values immediately before and after the intervention. The same patterns of value change have been observed in recent longitudinal studies that examined intraindividual value change over periods ranging from 3 months to 2 years, for participants in different life contexts, populations, and languages (Bardi et al., 2009).

4.6. Summary of the system level

In the 20-year span since Schwartz (1992) described the circular model of values, studies of diverse processes have indicated that this model accurately reflects people's mental representations of values. The model predicts coherent patterns in the accessibility of values from memory, judgments of value coargumentation in rhetoric, feelings of ambivalence toward others, effects of value priming on behavior, and patterns of value change. Together, these findings provide cogent evidence that mental representations of values include a level at which values are interconnected via the motivational goals that values express. This evidence helps to provide a broad framework for understanding values and to appreciate that people's processing of any particular focal value is linked to other values operating in the background.



5. THE (ABSTRACT) VALUE LEVEL

Do the interconnections between values at the system level exhaust all that we can learn about mental representations of values? If that were the case, it would be tantamount to accepting that values function solely as a circular, self-sustaining network, with no explanation of how particular values come to be more important and others less important in the network of values. People differ greatly in their value priorities, and these differences can be understood only by expanding our analysis to examine how mental representations of values sustain the importance of particular values. This entails asking about the information that is processed in people's minds when they indicate that abstract values are important to them.

Evaluative judgments in general subsume three distinct psychological components: cognition, emotion, and behavior (Fabrigar et al., 2005; Zanna & Rempel, 1988). That is, people's judgments of any target—such as an abstract value—are shaped by information in memory about their relevant feelings, past behavioral responses, and beliefs about the target attributes. This perspective is supported by abundant research examining judgments of *favorability* (vs. *unfavorability*) toward diverse attitude targets (Fabrigar et al., 2005; Maio & Haddock, 2007) and worth considering as an explanation of the psychological information used in judgments of the *importance* of diverse values (Rokeach, 1973). In this section, I describe theory and evidence indicating that emotional information plays a particularly large role in sustaining value importance.

5.1. The primacy of affect in values: Values as truisms

The evidence for a strong emotion component of values is congruent with Beck et al.'s (1979) clinical theory of depression and Johnson-Laird and Oatley's (1992) social theory of emotion. Both theories posit that emotional experience is connected to values and perceived failures to live up to them. More recently, Maio and Olson (1998) proposed that emotion is the dominant source of value importance. They suggested that values are often based largely on the way that values make us feel, rather than arguments supporting values or past behaviors relevant to them. This prediction was derived from William McGuire's (1964) seminal theory and evidence about cultural truisms. McGuire predicted and found that strong social consensus surrounding culturally shared beliefs causes people to perceive no need to build up cognitive defenses for them; people don't need to build arguments supporting the belief because no one ever attacks them. Maio and Olson (1998) noted that many values are consensually endorsed and accepted without question and that, consistent with McGuire's evidence for

cultural truisms, people should rarely need to form cognitive arguments supporting these values. Instead of relying on cognitive support, consensually shared values can be sustained by strong affective support. More reflection and argumentative support should emerge only for those values that receive lower consensual support.

The first tests of this reasoning were based on evidence that people bidirectionally change their attitude toward an object (e.g., a beverage) after being induced to contemplate and analyze their reasons for their attitude, but only when people know little about the target (Wilson et al., 1989a,b). This effect is presumed to occur because individuals who lack knowledge about an attitude object possess attitudes that are only weakly associated with a set of reasons for their attitudes (Wilson et al., 1989a,b). Thus, when asked to analyze their reasons, these individuals must indicate an assortment of reasons that are merely easy to verbalize and accessible, but probably not the real basis of their original attitude rating. Based on these new reasons, people report a new attitude that is either more or less favorable than before. Similarly, if people lack actual knowledge about a value, analyzing reasons for the values should force people to indicate an assortment of creative reasons that are not the real origin of their value ratings. Based on these reasons, people should rerate the values as being either more or less important than before.

A number of experiments have tested this prediction (Bernard et al., 2003a; Maio, 2002; Maio & Olson, 1998). In one of these experiments, participants first completed a measure of five self-transcendence and five openness values. Participants in the experimental condition were then asked to spend 20 minutes analyzing their reasons for considering the five self-transcendence values to be important or unimportant. Participants in the control condition were instead asked to analyze their reasons for liking or disliking five different beverages. Participants then rerated the original values among numerous other values in an ostensibly new measure. The principal analyses examined the average magnitude of value change from the premanipulation measure to the postmanipulation measure, for both the five self-transcendence and the five openness values. As expected, participants who analyzed their reasons for their self-transcendence values changed their self-transcendence values significantly more than participants in the control condition, whereas participants who analyzed their reasons for their self-transcendence values did not change their openness values significantly more (or less) than participants in the control condition. Furthermore, this value change went in both negative and positive directions, depending on the coded strength of participants' reasons as support for the values. Overall, then, analyzing reasons for the self-transcendence values caused them to change.

Subsequent experiments found the same effect of analyzing reasons among the other value types in the circular model (Bernard et al., 2003a). Most importantly, the effect of analyzing reasons did *not* occur when

participants were given a prior opportunity to build cognitive support for their values, through a task that involved evaluating diverse reasons for and against the values 1 week earlier (Maio & Olson, 1998). Thus, the effect of analyzing reasons crucially depended on the absence of a prior opportunity to build cognitive arguments for values: the presence of real prior thought about reasons for values eliminates the effect.

A lack of cognitive support was suggested by other observations from this research. For instance, participants were able to list an average of more than five reasons for liking or disliking each beverage in the control condition (e.g., milk), but less than half as many reasons supporting each value (e.g., helpfulness). Participants' reasons for a value frequently meandered and merely repeated the importance of value before eventually describing some logical arguments. Also, during debriefing, participants frequently commented that the research was interesting because they had not thought of reasons for the values before.

5.2. The component facilitation test

It is not wise to rely on the results of the analyzing reasons paradigm alone, despite the prior research supporting its use. This paradigm does not directly compare degrees of cognitive, affective, and behavioral support for values; it focuses on the effect of reasons alone. In addition, the paradigm could not test the hypothesis that people draw on emotion more strongly to support values that are consensually high in importance. A different paradigm is needed to address both of these issues.

These issues can be addressed using a paradigm based on the task facilitation methodology that has been used in diverse studies of memory and social cognition (Klein & Loftus, 1990; Klein et al., 1992). In this method, participants complete a target judgment and then respond to probes relevant to the information that may have been used in the target judgment. The speed of responding to the probes should be faster if the response had been accessed and used during the prior judgment. This method has been used with values as the target judgment, and affective, behavioral, and cognitive information as the focus of the subsequent probes (Maio et al., 2009a). In the first step of a trial in this Component Facilitation Test (CFT), participants rate the importance of a value or define the value (as a control task). After writing their rating or definition, they are asked to quickly identify a cognition, feeling, or behavior that they associated with the value. Participants receive many detailed instructions, examples, and practice trials before responding to a set of values assigned to these manipulations in a within-subjects design, counter-balanced across the different types of values.

If an importance rating for a consensually shared value brings to mind a feeling, then participants should be quicker at giving a feeling after the importance judgment than after providing the definition, and this

facilitation difference should be weaker for recollections of behaviors and cognitions. Across two experiments, we found exactly this pattern across a set of 20 values that were highest in consensual importance (Maio et al., 2009a). This difference in facilitation effects was significantly attenuated in a set of 20 values that were lowest in consensual importance. Thus, these results supported the hypothesis that emotions are the primary source of information for consensually important values.

5.3. Values as self-guides: Dejection versus agitation

The evidence from the analyzing reasons paradigm and the CFT both indicate that values are strongly intertwined with emotion. This begs a further question: what types of emotion are elicited by values? Emotions vary tremendously. They can be low in activation or arousal level, while also being negative or positive in valence (Russell, 1980). For instance, happiness is an emotion that is positive and high in arousal, whereas contentment is positive but low in arousal level; anger is negative and high in arousal, whereas sadness is negative and low in arousal. Many researchers have argued that happiness, anger, and sadness are three of several prototypical emotions, characterized by unique facial expressions (Ekman & Friesen, 1986). (Other potential prototypical emotions include disgust, fear, and surprise.) An interesting issue is whether different types of emotions vary in their potential to be aroused by values.

This issue is relevant to Higgins's (1987, 1997) theory that emotions are influenced by our *self-guides*. According to Higgins, Ideal self-guides function as aspirations, whereas ought self-guides function as minimal standards: an ideal self-guide is what people feel they *want* to be, whereas an ought self-guide is what people feel they *should* be. Higgins has predicted and found that discrepancies between self-perceptions of our actual self-aspects and our ideal self-guides (actual-ideal discrepancies) lead to dejection-orientated emotions, such as sadness. In contrast, discrepancies between our actual self-aspects and our ought self-guides (actual-ought discrepancies) lead to agitation-orientated emotions, such as anxiety. Both types of effect occur only when the self-guides are self-relevant, and, for actual-ought self-guide discrepancies, this self-relevance can emerge by making salient others' standards for behavior, perhaps by making our behavior publically visible to others (Higgins, 1999).

These findings may help us to understand the emotional associates of values. Rokeach (1973) predicted that values have a stronger ideal component than an ought component, particularly when they are important to the self. If this hypothesis is correct, then highly important values should function as ideal self-guides, and people should experience dejection-related affect when they see themselves as having violated these values. In contrast, values that are of lower importance to the self should be more likely to

function as ought self-guides. Consequently, people should experience agitation-related affect when they see themselves as having violated these values, but only when these “ought” values are made more self-relevant (e.g., by violating them in a public context).

We have tested this reasoning in a series of studies that produced a robust pattern of results (Rees & Maio, 2009). In the first experiment, we used Rokeach’s (1973) measure of value centrality to identify participants’ three most central values and three least important values from a set of 20 across the circular model. Participants then rated the degree which they *actually*, *ideally*, and *should* fulfill each value, using items that Higgins (1987) has developed for examining self-guides. These measures helped to test Rokeach’s prediction that central values are stronger ideals than oughts. As expected, the three most important values were rated as being significantly stronger ideals than oughts, whereas the reverse was true for the three least important values.

A subsequent experiment built on these results by testing whether *violation* of central and peripheral values elicits different emotional consequences. Participants wrote an essay opposing one of their most important central values or an essay opposing one of their least important values (determined from a pretest). Participants also wrote the essay in a private context or in a public context. Participants in the private context expected that their essays would not be shown to anyone else; conversely, participants in the public context expected that their essays would be shown to others. Participants then completed a questionnaire asking them to describe their current feelings, using items tapping dejection-type and agitation-type affect.

As expected, participants experienced more dejection after writing against one of their most important values than after writing against one of their least important values, and this effect occurred in both the private and the public contexts. In contrast, participants experienced more agitation after writing against one of their least important values than against one of their most important values, but only in the public context. This pattern perfectly fits Higgins’ (1999) summary of the conditions linking self-guides to emotional consequences, while integrating this prediction with an important distinction in the values literature: the distinction between central and peripheral values.

5.4. Summary of the value level

Affective, behavioral, and cognitive information may all help to determine the importance of values in our mental representations of them. Although cognitions, feelings, and behavior all contribute to values, the values-as-truisms hypothesis suggests that affective information plays the strongest role. Consistent with this hypothesis, experiments using two different paradigms have revealed evidence for a stronger basis in affect than in past behavior or beliefs. These findings make it important to look closer at the

nature of the emotions elicited by values. Consistent with self-discrepancy theory (Higgins, 1999) and Rokeach's (1973) descriptions of values, we predicted and found that our most important values serve as ideal self-guides and are more likely to elicit dejection when we do not adhere to them. In contrast, our least important values serve as ought self-guides and are more likely to make us feel agitated when we violate them in a manner that is visible to others.

6. THE INSTANTIATION LEVEL

Thus far, we have considered evidence (a) that mental representations of values encompass their motivational connections with each other and (b) that individual values in this system are abstract, unelaborated emotional constructs. How do people bridge the gap between their abstract, emotion-laden mental representation of values and more concrete judgment and action? To apply a value to a specific situation, the gap from the abstract representation of the value to the concrete representation of the situation must somehow be bridged.

This task is not easy. For example, while watching employment interviews, we might notice that one job candidate has substantially more body fat than another. The odds are that we will not consider this difference as relevant to equality as a value, unless we notice peculiar differences in outcome for the candidates. If the employers favor the thinner candidate despite a weaker interview, we *might* start to wonder whether the fatter candidate was treated equally or should have been treated equally. Such complexities in applying values to particular situations are routinely evident in judicial explanations of decisions involving fundamental values and rights, such as "equality," "freedom," and the "sanctity of life" (Conte et al., 2004).

These complexities may help to explain why people occasionally seem to flagrantly "bypass" their values. Value-behavior discrepancies appear in acts of discrimination (Dovidio & Gaertner, 1998), large-scale collective violence (Staub, 1993), bystander nonintervention in emergencies (Latané & Darley, 1976), and failures to act in ways that protect the environment (Webster & Riddell, 2006). In these situations, people can be aware of a value and find it to be highly important, but still do not adhere to it. In one famous experiment, Darley and Batson (1973) found that seminary students who were on their way to speak about the parable of the good Samaritan failed to help an ailing bystander if they were late to give their speech. The students were presumably aware of the importance they place on helpfulness (as addressed by the parable), but did not act in a congruent manner because they were running late. (They were more likely to help when they were running on time.)

Of course, competing values, norms, and traits are relevant to understanding behavior in such situations. The seminarians presumably valued punctuality and politeness, and these values may have outweighed helpfulness in this circumstance. Values also compete strongly with social norms (Bardi & Schwartz, 2003), can be inaccessible at the time of behavior (Macrae & Johnston, 1998), and may not be used as much by individuals who value conformity to the social context (Lönnqvist et al., 2006; Mellema & Bassili, 1995). However, another important factor has been neglected: the abstract nature of values makes them malleable in their application. While running late, the seminarians might not have perceived the ailing bystander as a context relevant to helpfulness as a value. This variability in detection and use of a value within a context may occur for diverse issues. For example, some people view abortion as an instantiation of the value of “sanctity of life,” but these individuals may not see capital punishment as instantiating the value (and vice versa). Similarly, an individual may perceive “equality” as a requirement to treat diverse ethnic groups and men and women in the same manner, but fail to perceive “equality” in the issue of discrimination against people who differ in height or weight.

This variability may be a direct consequence of mentally representing values in an abstract, affective manner, without clear supporting cognitions and behaviors. These mental representations may require more elaboration to facilitate better detection of their relevance to concrete situations. In other words, equality and other values might become more powerful motivators of behavior when people have thought about them enough to include many concrete instantiations of them. These instantiations may help them to better recognize the value in subsequent situations. This hypothesis has been supported by recent research on the effects of value elaboration and the typicality of value instantiations.

6.1. Effects of value elaboration

The effects of value elaboration were first illustrated in a simple experiment that included three conditions (Maio et al., 2001). Participants in one condition were asked to write arguments for the importance of equality and then to rate the importance of equality to them. In another condition, participants completed word puzzles containing synonyms of equality and then rated the value’s importance. In a third condition, participants proceeded directly to the dependent measure, which was a version of the well-known minimal group paradigm (Diehl, 1990; Tajfel, 1970). In our version of this paradigm, participants were randomly assigned to either a “red” group or a “blue” group and asked to allocate points to members of their own group and the other group before beginning a quiz game. Participants were told that their own points to begin the game would be proportional to the points that they gave to others in their group. This instruction provided

a strong incentive to favor the in-group and helped make it difficult to allocate points equally.

Participants then completed decision-making matrices tapping the extent to which they allocated points equally rather than favoring their own group. Analyses of these point allocations revealed that, as expected, the tendency to choose equality was higher among participants in the condition that encouraged participants to elaborate arguments for the value than among participants in the condition that made equality salient or had no tasks relevant to the value. Thus, the formation of proequality reasons made participants allocate points more equally than merely making the value salient.

Of importance, this effect of value elaboration did *not* occur because the salient reasons condition caused participants to rate equality as more important: ratings of the importance of equality were not significantly different between the value elaboration and value salient conditions. In addition, this effect did not occur because value elaboration made the value of equality more accessible from memory; presumably, both this condition and the value salient condition primed equality, but only the condition that involved elaborating arguments for the value caused more egalitarian behavior. Indeed, additional data indicated that the value was made equally more accessible in both conditions than in the control condition. Thus, as expected, the salience of the arguments themselves was pivotal to the increase in egalitarian behavior; the abstract value remained the same, while the arguments created their own motivational impetus.

Scrutiny of the arguments provided further evidence for *how* they increased subsequent egalitarian behavior. Specifically, elaboration of the arguments led to more egalitarian behavior when participants' arguments included specific, concrete instantiations, rather than further reference to abstract arguments (e.g., references to other values). That is, elaboration was effective when participants spontaneously linked the value to specific tangible instantiations (e.g., Affirmative action for Blacks, self-esteem in physically challenged people). These concrete instantiations affected behavior independently of the importance and accessibility of the value itself.

Several subsequent experiments have replicated and extended these results. For instance, [Karremans \(2007\)](#) used the circular model of values as the basis for predicting that the elaboration of arguments for one type of value can affect behavior supporting a different, motivationally congruent value. Supporting this prediction, he found that participants who were asked to generate arguments regarding the values of honesty and loyalty were subsequently more likely to be helpful and that participants who were asked to generate arguments regarding the value of helpfulness were subsequently more egalitarian in their decision making. In addition, [Bernard et al. \(2003b\)](#) found that argument generation for a value causes greater resistance to countervalue propaganda, even several days after the initial generation of arguments. Overall, then, the generation of arguments supporting a value

has important effects on behavior affirming the value and related values, while also increasing resistance to persuasive messages attacking the value.

6.2. The effects of typicality

The powerful role of the concrete value instantiations in participants' pro-value arguments makes salient the bridging problem mentioned earlier. There are three principal ways in which concrete value instantiations could act to bridge the value-action gap. They could (1) affect a strength-related property of the abstract value itself (e.g., value certainty), (2) act as metaphors that we apply to subsequent situations through analogical reasoning, or (3) affect our perceptual readiness to detect the value in subsequent situations.

These three possibilities can be illustrated by describing experiments that tested whether two equally concrete instantiations of a value might nevertheless have different effects on subsequent behavior, depending on whether the instantiations are typical or atypical for the value (Maio et al., 2009c). The typicality of instantiations has long played a fundamental role in theories of conceptual structure. Typical instantiations (e.g., robin) of a concept (e.g., bird) are accessible in memory as frequent examples of a concept. They are categorized faster (Heinze et al., 1998) and are more likely to be mentioned first when participants are asked to list all members of a category (Battig & Montague, 1969). Similarly, typical instantiations are verified more quickly and elicit lower brain activity than atypical instances and nonmembers of a category (Stuss et al., 1983). Furthermore, typical instances of a category are more likely to serve as cognitive reference points than atypical instantiations (Rosch, 1973). For example, people are more likely to say that "a raven [atypical] is like a blackbird [typical]" than to say that "a blackbird [typical] is like a raven [atypical]." Consistent with this role as reference points, people are more likely to be influenced by their social category attitudes in their interactions with typical members of the social category than with atypical members (Lord et al., 1991, 1994).

It may seem counterintuitive to suggest that the instantiation of a value in one context can affect the application of the value in a subsequent, different context. For instance, it would be illogical to treat a new immigrant group more or less equally after recently thinking about equality between men and women (a typical instantiation of the value of equality) than after thinking about equality between right handers and left handers (an atypical instantiation of the value). Such an effect would also run contrary to the long-standing emphasis on values as abstract, trans-situational guiding principles that influence subsequent behavior on a higher level than the individual situation (Bardi & Schwartz, 2003; Schwartz, 1992). If values are truly abstract and trans-situational, the typicality of a single prior instantiation should not matter—all that matters are that the broad value fits the new situation.

Maio et al. (2009c) described four experiments that tested whether the typicality of a value instantiation influences subsequent behavior. All four experiments instantiated the value of equality within the context of decisions to hire a senior executive. The experiments then assessed egalitarian behavior in the modified minimal group paradigm used by Maio et al. (2001). The first experiment tested whether the contemplation of arguments for and against the value of equality is more likely to elicit egalitarian behavior when people are asked to think about equality for women, who are a typical target of the value's application, than when participants are asked to think about equality for left handers, who are an atypical target of the value's application. In contrast, the second experiment did not elicit reasons for equality, but simply examined the effects of exposure to descriptions of a job interview that elicited inadvertent discrimination against the typical and atypical target groups. The third experiment used different groups to instantiate the value, with Blacks as the typical target and the visually disabled as an atypical target. The fourth experiment contrasted Blacks as the typical target against left handers as the atypical target.

Pilot testing had revealed that participants regarded the ideal of equality as being clearly applicable to the typical and atypical target groups that we chose. For instance, sex and handedness are arbitrary distinctions that should have no effect on hiring of a senior executive—the abstract value of equality does not distinguish between these cases, even though their typicality as instantiations of the value differ. Nonetheless, the results of all four experiments indicated that thinking about equality in the context of the typical instantiation (e.g., women) led to less subsequent discrimination than thinking about equality in the context of an atypical instantiation. Discrimination after thinking about the atypical instantiation did not differ from discrimination in a separate control condition.

Additional evidence across the experiments indicated that the effect of typicality was not attributable to changes in properties of the abstract value after the instantiations. The experiments included numerous properties of the value at an abstract level, including measures of value importance, value strength, value relevance to the self, value certainty, value-associated affect, means of value regulation, value accessibility, value familiarity, self-efficacy, and utility of the value for the self and others. None of these variables significantly changed in a way that could explain the results. Though participants had ample opportunity to express increased commitment to the value, there was no evidence that any of these variables mediated the robust effect of typicality. Moreover, the lack of an effect on value accessibility argues against any (remote) possibility that the typical instantiation condition merely primed the value more strongly than the atypical instantiation condition. (This possibility was remote because we explicitly made the value salient in the typical and atypical conditions.)

The evidence also did not support the possibility that the instantiations exerted their effects by functioning as metaphors for the subsequent behavior. During debriefing, none of the participants thought that they *should* be or were influenced by the nature of the prior instantiation. To them, there was no reason why seeing discrimination against women or left handers or against Blacks or the disabled should cause different subsequent levels of discrimination in the minimal group paradigm. In addition, participants rated the relevance of the instantiations to their subsequent decisions in the minimal group paradigm, and these ratings did *not* statistically mediate the greater effect of the typical instantiation. Together, these observations suggest that the instantiations did not affect behavior by causing participants to engage in analogical reasoning that compared the prior instantiation to the subsequent context.

Instead, the results supported the hypothesis that the typicality of prior value instantiation affects “perceptual readiness” to apply values to subsequent situations. Bruner (1957) used this phrase to describe the ability to detect value-relevant features of a situation. In theory, perceptual readiness should be high after a typical instantiation of a value because the typical instantiation occupies a central place in mental representations of the value. Consequently, spreading of activation after a typical instantiation should remain close to the concept, making it more likely that elements of the new situation are processed in relation to features of the instantiated value (e.g., equality). In contrast, spread of activation from a peripheral, atypical instantiation should just as easily lead to thinking about unrelated concepts (e.g., dexterity, sports) as to thoughts about the value. As a result of this bottom-up construal process, a typical instantiation may make people more perceptually ready to “see” a value in a subsequent situation, in the same manner as we can become perceptually ready to “see” any category or concept that has been primed by a typical exemplar.

This perceptual detection was assessed through items that asked participants to rate the extent to which they experienced different goals when they allocated points (e.g., “success,” and “protecting my group”). Participants’ situationally instantiated goals became less in-group favoring and more egalitarian after the typical instantiation than after the atypical instantiation. That is, the typical instantiations affected the goals that were spontaneously formed in the subsequent context. Moreover, this change in the situationally instantiated goals statistically mediated the effect of typicality on subsequent egalitarian behavior. Together, these results support the hypothesis that typical instantiations affect behavior by making people perceptually ready to “see” a value in subsequent contexts.

6.3. Summary of the instantiation level

To understand the effects of values on behavior, we must consider how people make the jump from the abstract representations of a value to specific behaviors. Across a number of experiments, procedures that induced concrete

instantiations of a value caused an increase in subsequent behavior supporting the value. This effect does not occur because the instantiations change the importance of the value or its accessibility from memory. Instead, the effect depends on the concrete instantiations themselves. When these instantiations are typical exemplars of a value, they increase people's perceptual readiness to detect features of subsequent situations that are relevant to the value, causing the formation of situational goals that promote the value. In other words, the prior instantiation of a value affects the process of value application.



7. NEW HORIZONS

In the past two decades, research has discovered a great deal about the mental representations of values at the levels of the value system, individual values, and value instantiations. Many additional discoveries could occur in the next two decades. I am hopeful that future research on mental representations of values will help to address at least five basic issues: cross-cultural differences; methods of value measurement; relations between values, goals, attitudes, and traits; the connection between values and the self; and the role of values in moral judgment.

7.1. Cross-cultural differences

It is unlikely that [Schwartz's \(1992\)](#) circular model *perfectly* reflects how values are mentally represented at the system level. Potential limitations were foreshadowed by [Schwartz \(1992\)](#), who noted that 12 of the 56 values in the circular model did not show a consistent location in a specified lower order value domain across cultures. This limitation could be exacerbated if future research discovers that additional values should be included in the model—values that might also vary across cultures.

There is abundant room for further progress in addressing the role of culture. Many nations have not yet been examined using both the SVS and the PVQ, and there may be patterns of difference between cultures that have not yet been identified. For instance, an interesting issue is whether some cultures are more likely than others to recognize and overtly reward behaviors that fulfill openness, conservation, and self-transcendence values. These values may become associated with self-enhancement because you need to fulfill them in order to achieve material reward. The self-rewarding facet of these values may also become entrenched over time, even when overt rewards are absent. For example, helpfulness might become a means to fulfill personal desires for achievement (e.g., feel more achievement from saving lives). (A similar process may occur in occupational roles that pay people to perform duties that promote self-transcending, openness, or

conservation values.) In general, systematic differences in cultural reinforcement for different values may shape the interpretation of abstract values in a manner that alters their structure in the value system.

Note that this issue raises the need for cross-cultural examinations of the mental representations of values at the level of individual abstract values and at the level of their instantiations. Thus far, the research examining the contributions of affective, behavioral, and cognitive information to values has been conducted in two Western nations (Canada, United Kingdom). It is possible that particular sets of values are more cognitively elaborated in nations that experience frequent debate between radically different political ideologies. For instance, such debate is common in European nations where the dominant ideologies have changed in the last century (e.g., Italy, Spain, and former Eastern bloc nations). In contrast, the United States has maintained the same political ideology for over 200 years. An interesting question is whether these nations differ in the extent to which their citizens cognitively elaborate particular values or the particular instantiations that they bring to mind for the values or both.

7.2. Methods of value measurement

Although social psychologists have consistently treated values as conscious, explicitly reportable constructs, it may be useful to add implicit measures to the battery of methods for assessing them. Implicit measures can isolate automatic evaluations of values. At first glance, automatic evaluations of values may seem unimportant because long-standing perspectives have explicitly treated values as *conscious* judgments of desirable trans-situational goals. Nonetheless, implicit measures are compatible with the traditional view of values if we keep in mind that, in general, both conscious and unconscious judgments and behaviors may be shaped partly by automatic associations (Fazio & Olson, 2003; Vargas et al., 2004) and that, consistent with the strong role of affect in values, some of the automatic associations with them may be unconscious or difficult to articulate. Implicit measures are particularly useful when automatic associations have these properties.

Nonetheless, there are several obstacles to applying implicit measures to values. The first obstacle is that values involve judgments of importance and not differences in evaluation *per se*. That is, as described earlier, people “like” most values, and the issue is not whether they elicit the strong positive *or* negative evaluations that are the hallmark of attitudes. An implicit measure of values must therefore be able to detect differences on a unipolar (“not important” to “very important”) scale, rather than a bipolar (dislike to like) scale, while reflecting the concept of importance to self, rather than evaluative associations that are not necessarily specific to the self (see Olson & Fazio, 2004).

The second obstacle is that values contain no obvious contrast category. In most implicit measures, scores are calculated by examining differences in

response to one attitude target versus another. For example, the Implicit Association Test has famously been used to assess prejudice by contrasting responses to Blacks with responses to Whites (Greenwald et al., 1998). It is not clear whether values should be contrasted against nonvalue terms that are opposite in meaning (e.g., helpful vs. unhelpful) or against value terms that are opposite in motivational connotation but not meaning (e.g., helpfulness vs. wealth). To avoid this problem, it may be preferable to use an implicit methodology that does not require a contrast category, such as the Single Category Implicit Association Test (SC-IAT: Karpinski & Steinman, 2006).

The third problem is that most measures of values focus on both the system level (by getting people to focus on differences between values) and the individual-value level (by focusing on each value at an abstract level). It is not yet clear how an implicit measure can tap automatic comparisons, and any value at an abstract level may possess diverse associations that introduce error into the measurement. Although research has not yet found a solution to either problem, they might be addressed partly by deriving implicit scores across several values that serve related motives, rather than attempting to isolate associations with any particular value concept. Such aggregation would somewhat attenuate the need to consider comparisons between values and reduce error from diverse associations.

We have recently begun developing an implicit measure of values that overcomes these obstacles (Gebauer et al., 2009). This measure modified the SC-IAT (Karpinski & Steinman, 2006) to assess the 10 lower order value domains described in the circular model. Across several studies, the measure exhibits satisfactory reliability (most α s > 0.70) for all of the 10 lower order domains and even higher reliability when they were collapsed into scores for the four higher order domains. Moreover, scores on the implicit measure correlated significantly with participants' scores on the SVS. Furthermore, scores on the Value-SC-IAT were less strongly related to social desirability than the SVS but were related to scores on a measure of value-expressive behavior (Bardi & Schwartz, 2003), even when controlling for the SVS. This evidence provides a basis for optimism in the utility of complementing extant measures of values with implicit measures of values.

7.3. Values, goals, attitudes, and traits

Researchers who study values frequently encounter questions about overlap between values and constructs that are more dominant in personality and social psychology. These questions focus on connections between values and goals, attitudes, and traits in particular. In some ways, the questions are ironic because early research on all three constructs quite often focused on value-like concepts, but they came to be labeled differently. For example, some classic early research on the "New Look" perspective on cognition

(Bruner, 1992) showed that the personal importance of values from the Allport–Vernon study of values predicted the perceptual readiness to detect them (Haigh & Fiske, 1952; McGinnies, 1950; McGinnies & Bowles, 1949; Postman et al., 1948). Despite the explicit references to values by the original researchers, it is now commonplace for researchers to treat this work simply as evidence for the role of *goals* in perception. It is possible that this change was made easy by past slippage in the use of the values construct (see Rohan, 2000). In any event, as research on goals has become more prominent in social psychological research. Scientists who study values are increasingly obliged to explain their use of the term and its connection to goals. As a result, articles examining values frequently explain them and their relation to goals (see Verplanken & Holland, 2002, for an elegant example).

There are important ways in which values overlap with contemporary conceptualizations of goals, attitudes, and traits: (1) values *and* goals express more basic human motivations, (2) values *and* attitudes are evaluative in nature, and (3) values *and* traits are at least somewhat stable over time. For these reasons, values have something in common with all three constructs; *ipso facto*, values cannot be reduced to merely one of them, and all four constructs have their own unique focus.

Nevertheless, the overlapping conceptual niche that values occupy makes it worthwhile to explore the connections between values and these other constructs empirically. Initial progress has been made in all three domains. With regard to goals, Grouzet and colleagues (2005) have predicted and found a circular structure of relations between personal goals (e.g., physical health, popularity) that reflects motivational conflicts similar to those expressed by values. Similarly, political attitudes have dimensions that are correlated with the motivational conflicts captured by values (Ashton et al., 2005). Finally, research on traits has found systematic relations between values and traits that are consistent with assumptions made by the circular model and the Five Factor Model of personality (Roccas et al., 2002). Together, this evidence reveals meaningful interrelations between extant operationalizations of values, goals, attitudes, and traits.

At the same time, this evidence raises questions about the effects of these constructs independent of each other. For instance, Grouzet et al.'s (2005) circular model of conflicts and compatibilities between personal goals provides a basis for expecting effects of goal change and goal priming similar to the pattern previously described for values (Maio et al., 2009d). Personal goal change and priming should increase the importance and pursuit of adjacent goals, diminish the importance and pursuit of opposing goals, and have no effect on orthogonal goals. If these results occur, an intriguing and useful follow-up would examine the extent to which mental representations of values and personal goals differ and yield distinct effects on behavior.

7.4. Values and the self

An important additional step involves considering how our expanded understanding of values affects processes relevant to the self. Because values are defined *vis à vis* their importance to the self, it is important to further consider the role of the self-concept in mental representations of values and vice versa. Several social psychological theories may be relevant to this issue. For instance, self-affirmation theory (Steele, 1988) addresses the conditions that cause attitude-discrepant behavior to elicit feelings of dissonance (i.e., discomfort) and attitude change. This theory predicts that feelings of dissonance can be reduced by reasserting personal values, thereby preventing attitude change. Moreover, the theory predicts that this effect should emerge even when the values are completely unrelated to the attitude. Abundant research has supported these predictions and shown that value affirmation helps to reduce other self-defensive processes, such as resistance to counterattitudinal messages (Sherman & Cohen, 2006). Intriguingly, however, recent evidence indicates that most participants may spontaneously affirm values that are social in nature, and the effects of value affirmation are mediated by its impact on feelings of love and connectedness to others (Crocker et al., 2008).

This evidence raises questions about whether the effects of values on diverse self-processes depend on which values are being considered. For instance, do all of a person's values reduce the "terror" from the mere salience of death (Greenberg et al., 1997)? Perhaps values that implicitly fulfill belongingness needs (e.g., self-transcendence values) play a stronger role in self-esteem promotion and protection from the psychological effects of death salience. This suggestion is consistent with Leary and Baumeister's (2000) sociometer theory, which indicates that belongingness needs are paramount. Regardless of whether or not this speculation is correct, the bottom line is that values differ greatly in their content, and this content should matter for how they function.

7.5. Values and moral judgment

The issue in moral judgment is whether an action is morally right or wrong. We can base these judgments partly on decisions about whether an action violates or promotes basic ideals or values. For instance, the act of murdering someone who assaulted you might be seen as a violation of the ideal of forgiveness. This way of thinking reflects the classic deontological view of moral judgment in philosophy (Kant, 1949). Put simply, this perspective holds that moral action involves following intrinsically good principles for actions. On the other hand, people can judge whether this act is morally acceptable based on the consequences of the act. For example, vengeance might be judged as acceptable if the victim was a habitual offender and was likely to assault the person and others again—the murder might then be construed as an

act that has more good consequences than bad. This way of thinking reflects the classic consequentialist perspective in moral philosophy: moral judgment incorporates judgments of sum total of consequences for the self and others, in addition to any principles that people may hold. In fact, this perspective can be taken a step further to claim that our principles themselves can be rationally defended only if a consequentialist calculation supports them.

An interesting alternative philosophy takes the emphasis away from reasoning and toward emotion (Hume, 1978; Mackie, 1977; Westermarck, 1906; Wittgenstein, 1965). For example, Hume (1966) argued that there can be no impetus to moral judgment without emotions and that reason alone cannot separate vice from virtue. This position is also favored by existentialist philosophy (Sartre, 1975) and well articulated by Ayer (1967), who argued that moral judgments are simply feelings about pseudoconcepts that are completely unanalyzable. All we can debate is whether particular actions promote or threaten particular values, but we do not and cannot argue about the validity of the values themselves.

Of course, this view fits the evidence that many values function as truisms at the individual, abstract level. This view also fits experimental evidence about the role of emotion in moral judgments. For instance, a series of influential studies have found that feelings that some acts are morally wrong (e.g., sexual intercourse with a dead chicken, eating your dog) are explainable more by experienced feelings of disgust than by consequences that are robust to various permutations of the “wrong” (Haidt, 2001). These effects of emotion on moral judgment are interesting partly because they occur for very specific, concrete actions, and it is not yet clear whether these actions instantiate violations of any particular values. If they are atypical instantiations of particular values, then contemplation of these instances should be unlikely to carry-over to subsequent contexts, leading to failures in detecting inconsistencies in moral judgment.

A relevant issue for the study of values and moral judgment is whether emotion “should” have a role in moral judgment. Feminist philosophers have claimed that emotion should play a role (Held, 1990) and that moral judgment should be oriented toward cultivating adaptive emotions (Baier, 1994). Their claim is that most discussion of moral reasoning has focused on men’s conceptions of morality, which implicitly regards emotion as a female weakness (Gilligan, 1982). The classical, male-dominated view is that moral judgment should prioritize deep reasoning about laws and personal principles. Aristotle (1959) claimed that deep contemplation of moral issues has an added benefit—enduring happiness at the exercise of contemplation—though Voltaire made it quite clear that such contemplation can also bring about more anguish than would blissful ignorance of the issues (Redman, 1963). It would be interesting to discover whether the speculations of moral philosophers are evident in sex differences in the willingness to engage in value clarification.

8. CODA

Since Schwartz's (1992) circular model was first published in *Advances in Experimental Social Psychology* almost 20 years ago, our understanding of the psychological nature of values and their functioning has significantly grown. During this time, the application of a social cognitive perspective to values has helped to discover more about their roles at different levels of mental representation. At the system level, the circular model has facilitated the discovery of patterns in a variety of value-relevant processes, including value accessibility, value change, and effects of value priming. At the level of individual, abstract values, the theory that values function as truisms has led to the discovery that emotion plays a dominant role in judgments of value importance. At the level of value instantiations, we have learned more about how the elaboration of cognitive support for values influences subsequent behavior. These advances have important implications for social psychological theories that cite values and for major theories in psychology. The continued development of research on values will help our psychological understanding of them to become more commensurate with their importance to other social sciences (e.g., philosophy, sociology, history) and to political organizations like the United Nations, which require a more complete understanding of the psychological vicissitudes of the "shared values" they seek.

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AN INTERPERSONAL APPROACH TO EMOTION IN SOCIAL DECISION MAKING: THE EMOTIONS AS SOCIAL INFORMATION MODEL

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Contents

1. Concerns with Past Research and Aims of the Present Article	47
2. The Structure and (Perceived) Nature of Social Decision Making	49
3. Sense-Making and the Signaling Functions of Discrete Emotions	51
4. The EASI Model	52
4.1. Inferential processes: Distilling information from others' emotions	53
4.2. Affective reactions: Emotional contagion, affect infusion, and mood management	54
4.3. Dual functions: Inferential processes and affective reactions	55
4.4. Differential responses to discrete emotions in cooperative versus competitive settings	56
4.5. Epistemic motivation and the processing of emotional information	62
4.6. Summary of model and propositions	63
5. The Interpersonal Effects of Emotions in Cooperative Situations	64
5.1. Signs of opportunity and affiliation (e.g., happiness) facilitate cooperation	64
5.2. Signs of dominance and aggression (e.g., anger) undermine cooperation	65
5.3. Signs of supplication (e.g., sadness, distress, disappointment) invite cooperation	68
5.4. Signs of appeasement (e.g., guilt, regret, embarrassment) decrease competition	69
5.5. Emerging patterns in cooperative settings	70

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6. The Interpersonal Effects of Emotions in Competitive Situations	71
6.1. Signs of opportunity and affiliation (e.g., happiness) invite competition	72
6.2. Signs of dominance and aggression (e.g., anger) induce cooperation	73
6.3. Signs of supplication (e.g., sadness, distress, disappointment) are ignored	76
6.4. Signs of appeasement (e.g., guilt, regret, embarrassment) invite competition	77
6.5. Emerging patterns in competitive settings	77
7. Theoretical Implications	79
7.1. The importance of putting emotion into context	79
7.2. Why do we have emotions? Insights from the interpersonal approach	81
7.3. Not all emotions are created equal: The promise of studying discrete emotions	82
8. Avenues for Future Research	83
8.1. Emotional intelligence: Recognition and regulation	83
8.2. Why are you angry? Integral versus incidental emotions	84
8.3. Mixed emotions: Blends and contrasts	84
8.4. Moving away: When do emotional expressions lead a target to "leave the field?"	85
9. Conclusion	86
Acknowledgment	87
References	87

Abstract

Social decisions are heavily influenced by emotion. For decades, the dominant research paradigm has been characterized by a focus on the decision maker's own positive or negative mood. We argue that a full understanding of the role of emotion in social decision making requires a complementary focus on interpersonal effects (i.e., the effects of one individual's emotions on the other's behavior); a focus on discrete emotions rather than general mood states; and a distinction between cooperative and competitive settings. To advance insight into these issues, we present the Emotions as Social Information (EASI) model. The model is grounded in two basic assumptions, namely that individuals use others' emotions to make sense of ambiguous situations, and that the effects of others' emotions and the processes that drive them depend critically on the cooperative or competitive nature of the situation. A review of recent research supports our analysis. We demonstrate that the interpersonal effects of emotions are pervasive and can be better understood in terms of the unique social functions of each emotion than in terms of valence. Effects in cooperative settings are best explained in terms of affective reactions (i.e., emotional contagion, affect infusion, and mood management), whereas effects in competitive contexts are better understood in terms of the strategic inferences

individuals draw from other's emotions. We conclude by discussing the implications of our model and highlighting avenues for future research.

Would you trust a salesperson who smiles at you, or give money to a grumpy beggar muttering angry phrases? How would you react to a friend who arrives late for an appointment looking guilty and ashamed? Would you work harder when your team leader appears upbeat and cheerful or rather irritated and moody? Reversing the roles, would you show that you are angry or happy about your negotiation partner's insultingly low or surprisingly generous offer? If you wanted to solicit help, which emotions would you show? Diverse as they may seem, all these questions revolve around one fundamental issue: How do emotional expressions shape social interactions and decisions? This is the focus of the chapter.

Emotions have long been regarded as disruptive forces that interfere with rational decision making. Increasingly, however, this view has given way to a functional perspective on emotions. Contemporary scholars share the idea that emotions signal the importance of events to relevant concerns, help prioritize goals, and generate a state of action readiness that prepares the individual to respond to changes in the environment (see, e.g., [Frijda, 1986](#)). This not only applies to individual goals and actions but also, and perhaps especially, to social interaction and decision making—situations in which one's own behavior influences and is influenced by one or more others. Indeed, social interactions are among the most commonly reported antecedents of emotions ([Anderson & Guerrero, 1998](#); [Shaver et al., 1992](#)), and emotions have plenty of potential to shape behavior ([Frijda, 1986](#); [Manstead, 1991](#); [Van Kleef, 2009](#)).

Although the last decades have witnessed a growing attention to the role of emotion in social decision making, we believe that this research has not done justice to the inherently social nature of emotion. The reason is that most research has addressed the *intrapersonal* effects of affective states (especially positive vs. negative moods), demonstrating that individuals' judgments and decisions are influenced by their mood state (for reviews, see e.g., [Ashby et al., 1999](#); [Forgas, 1995](#); [Isen, 1987](#); [Schwarz et al., 1991](#); [Wyer et al., 1999](#)). Although much of this work involved social situations, the role of emotion itself has been studied in a rather a-social way, ignoring the role of the interaction partner. In this article, we advocate a more *social* approach, advancing a new model of the interpersonal effects of emotion in social decision making.

1. CONCERNS WITH PAST RESEARCH AND AIMS OF THE PRESENT ARTICLE

The chapter—and much of the research reviewed in it—is motivated by three key concerns about the dominant research focus. The first concern is the prevailing focus on intrapersonal effects. We contend that the role of

emotion in social decision making cannot be fully understood by merely considering the decision maker's own emotions. We don't just feel our emotions; we also express them in social interaction. This means that other people may observe our emotions, and may be influenced by them. Parkinson's (1996) article, entitled "Emotions are social," aptly notes that our emotions are not only often evoked by social interaction; but they also influence the behavior of social interaction partners by serving as a form of communication (Ekman, 1993; Fridlund, 1994; Frijda, 1986; Knutson, 1996). A true understanding of the role of emotion in social decision making therefore requires an additional focus on the interpersonal effects of emotions—the effects of one individual's emotions on the *other's* social decisions and behavior. Despite the growing popularity of social-functional approaches to emotion (e.g., Elfenbein, 2007; Fischer & Manstead, 2008; Frijda & Mesquita, 1994; Keltner & Haidt, 1999; Morris & Keltner, 2000; Oatley & Jenkins, 1992; Van Kleef, 2009), a systematic analysis in the context of social decision making is missing. Accordingly, our first objective is to fill this void.

Our second concern is with the tendency to focus on positive versus negative mood as opposed to discrete emotions. We argue that this emphasis on diffuse mood states blurs our understanding of the multifaceted role of emotion in social decision making. As explained in more detail below, each discrete emotion has its own antecedents, appraisal components, relational themes, and action tendencies (Frijda et al., 1989; Lazarus, 1991; Manstead & Tetlock, 1989; Roseman et al., 1994; Smith et al., 1993). Emotions therefore provide more differentiated information and carry more clear-cut behavioral implications than moods (Weiner, 1986). Our second goal, accordingly, is to highlight these specific functions of discrete emotions in the context of social decision making. We will show that discrete emotions (e.g., happiness, anger, sadness, guilt) have differential effects on social behavior that cannot be understood in terms of valence.

Our final concern is the relative neglect of the social context within which emotions are expressed and behavioral actions emerge. Although emotions have been studied in various domains of social decision making, context has seldom been varied within studies, and it has not been common to compare the effects of emotions across different social settings. We argue that it is important to consider the social context. In particular, we propose that the same emotions may have entirely different effects depending on whether they are expressed in a predominantly cooperative or competitive setting. Cooperative settings are generally characterized by higher levels of trust and benevolence and greater motivation to work together; competitive settings typically breed distrust, more selfish motivations, and strategic behavior (De Dreu et al., 2007). It stands to reason that people respond differently to a smile or frown from a partner in a cooperative setting than from an adversary in a competitive situation (Lanzetta & Englis, 1989).

Motivated by these observations, we present the Emotions as Social Information (EASI) model (see also [Van Kleef, 2009](#)) to enhance understanding of the interpersonal effects of emotions in social decision making. The model is grounded in two basic assumptions. The first is that social decision-making situations are fuzzy and are characterized by insufficient information about interdependent others' goals, desires, and intentions. In such an uncertain environment, people rely on additional cues to make sense of the situation. We propose that people use their partner's emotions to disambiguate the situation and to inform their social decisions.

Our second assumption is that the nature of the situation fundamentally shapes the interpersonal effects of emotions. In predominantly cooperative situations, where parties' goals are aligned and trust is high, people are likely to assimilate to the emotions of their partner, and their social decisions are likely to be influenced by their resulting emotional state. In more competitive settings, in contrast, where parties' goals conflict and trust tends to be low, individuals use their counterpart's emotions as strategic information to inform their behavior. This distinction has important implications for our understanding of the interpersonal effects of emotions in social decision making, as we demonstrate below.

This model helps us to generate and address new questions about the role of emotion in social life. How do the emotional expressions of one party influence the social decisions of interdependent others? What are the distinct social signals that are conveyed by discrete emotions, and how do individuals respond to those signals? When do emotions spread from one individual to the other, and how does this affect social decision making? What strategic information do people distill from their counterpart's emotional expressions, and how do they act on those inferences? We rely on the EASI model and recent empirical work to provide preliminary answers to these and other questions. To do so, we proceed as follows. We first build on the aforementioned assumptions to develop our model. Next, empirical support for the main propositions of the model is reviewed by considering research evidence from our own and others' laboratories. We close with a section summarizing our main conclusions and their implications, highlighting some key gaps in our knowledge, and offering suggestions for further research.



2. THE STRUCTURE AND (PERCEIVED) NATURE OF SOCIAL DECISION MAKING

People live in and depend on groups, and much of the human brain capacity is devoted to managing the social environment. In fact, it has been argued that the human brain evolved into its current size and form precisely because of the need to manage social interdependencies where decisions and

choices of the parties involved influence not only their own but also the other party's material and nonmaterial outcomes (Barton & Dunbar, 1997; Kelley et al., 2003). Examples of such social decision making include helping a colleague, making a group decision, deciding whether or not to pay taxes, and making or accepting an offer in a negotiation.

In their analysis of interdependence structures, De Dreu and Carnevale (2003) distinguished between "coordination" and "agreement" situations. Coordination situations are those in which individuals make independent decisions that influence their own as well as some other individual's outcome. An example is the classic and widely studied Prisoner's Dilemma (Komorita & Parks, 1995; Von Neumann & Morgenstern, 1947), capturing all those social dilemmas in which both parties are better off when both cooperate than when both defect, yet each party is best off when he or she defects and the other cooperates. For example, a husband and wife may each prefer doing nothing to clean the house, yet each party probably prefers a clean to a dirty house. Mutual cooperation (both clean the house) generates more value than mutual defection, but each party is best off when he or she defects and the other cooperates. A large number of studies, including some discussed here, have used the prisoner's dilemma game or some derivative social dilemma to study the conditions that lead people to make cooperative or noncooperative choices.

In addition to coordination situations in which individuals take independent actions that affect their own and others' outcomes, social decision making often involves parties making moves and countermoves until a common understanding or agreement is reached. Examples of these agreement games include teamwork, leader-follower exchanges, and negotiation (De Dreu & Carnevale, 2003). Many studies, including several reviewed below, use (modifications of) the Ultimatum Bargaining Game (UBG), in which an allocator divides a certain amount of money (e.g., €10) between him- or herself and a recipient. The recipient either accepts the proposed distribution, in which case the proposed distribution takes effect, or rejects the proposal, in which case neither allocator nor recipient receives anything. From a "rational" self-interest maximizing perspective, one would expect recipients to accept any offer that provides them with an outcome greater than zero and, as a corollary, allocators to offer as little as possible (e.g., out of 10, one offers 1 and keeps 9). Interestingly, however, a long list of studies shows that allocators tend to propose fair, or close to fair distributions, and that recipients reject unfair distributions (Camerer & Thaler, 1995).

Both coordination and agreement situations are mixed-motive in that each participant has incentives (a) to cooperate to serve collective, joint welfare and (b) to compete to serve personal, selfish concerns (Deutsch, 1973; Schelling, 1960). There is good evidence that because of temperament, socialization, or situational pressures, some individuals emphasize cooperative elements and de-emphasize or ignore competitive incentives, whereas other individuals do the reverse, emphasizing competitive rather than cooperative elements

(Carnevale & Pruitt, 1992; De Dreu, *in press*; Deutsch, 1973; Komorita & Parks, 1995; Rusbult & Van Lange, 2003). Thus, one and the same social decision situation may be perceived and interpreted quite differently, with important consequences for cooperative action.

Situations in and of themselves may also differ in degree of cooperativeness or competitiveness (De Dreu et al., 2008b; Kelley et al., 2003; Rusbult & Van Lange, 2003; Weber et al., 2004). Some situations offer more cooperative than competitive incentives and thereby drive people toward cooperation; other situations offer more competitive than cooperative incentives and predispose individuals toward competition and conflict. Thus, colleagues in a work team, friends on an annual outing, or parents discussing what school their children should attend may all perceive their situations to be predominantly cooperative. In contrast, a buyer and a seller negotiating the sale of an antique clock, opposing politicians in a public debate, and partners divorcing on bad terms who discuss the distribution of financial resources are likely to perceive their situation as predominantly competitive. As we will see, making a distinction between cooperative and competitive settings significantly furthers our understanding of the interpersonal effects of emotions in social decision making.



3. SENSE-MAKING AND THE SIGNALING FUNCTIONS OF DISCRETE EMOTIONS

The rational decision-making approach that has long dominated theorizing and research on social decision making rests on the premise that individuals have full and accurate knowledge about their own and their interdependent partner's goals, needs, and desires. However, such complete information is unlikely to exist in most social decision-making situations. Most of these situations are "fuzzy," in the sense that participants do not have full and accurate insight into the structure of the social situation (De Dreu et al., 2007). Individuals lack information about their partner's utility functions in that they do not know what is and what is not important to their partner; they do not know the amount of gain or loss their partner faces on specific issues; and they do not know what goals their partner seeks to achieve. Furthermore, people may have good reasons to doubt the accuracy and trustworthiness of explicit information about their partner's utility functions. According to Glimcher (2003), organisms that create "irreducible uncertainty" for competitors have an evolutionary advantage because such uncertainty cannot be learned and exploited by opponents. In social decision making, individuals may therefore promote uncertainty by withholding accurate information and providing inaccurate information (e.g., De Dreu et al., 2007; DePaulo, 1992; Steinel & De Dreu, 2004). This fundamental capacity and motivation to confuse and mislead others adds further to the fuzziness of social decision-making situations.

Situational fuzziness forces individuals to make sense of their social environment, including interdependent others. Because parties typically lack information about their partner's needs, desires, and goals, they must rely on a variety of cues to infer what to do, whether to help and cooperate or, instead, exploit and compete (De Dreu et al., 2007). A basic assumption underlying our model is that social decision makers use their partner's emotions to make sense of the situation (Manstead & Fischer, 2001). Emotions are different from moods in that they are *intentional*, that is, directed toward a specific stimulus—be it a person, an object, or an event (Frijda, 1994). In other words, emotions are *about* something, whereas moods are not. A person in a cheerful mood is not necessarily happy about anything in particular; he or she is just in a good mood, for no apparent reason. Furthermore, emotions are characterized by distinct subjective experiences, physiological reactions, expressions, and action tendencies (Ekman, 1993; Levenson et al., 1990; Parkinson et al., 2005; Roseman et al., 1994). For these reasons, discrete emotions are inherently more informative than diffuse moods.

Emotions provide information not just to oneself (Schwarz & Clore, 1983) but also to one's social environment (Keltner & Haidt, 1999; Manstead, 1991; Oatley & Johnson-Laird, 1987; Van Kleef, 2009). For instance, emotions convey information to observers about the sender's current feelings, social intentions, and orientation toward the relationship (Ames & Johar, 2009; Knutson, 1996; Manstead et al., 1999; Van Kleef et al., 2004a). Further, emotional expressions may evoke reciprocal or complementary emotions in others that in turn help individuals to respond adaptively to social events (Van Kleef et al., 2008). Finally, emotions serve as positive or negative reinforcers of others' behavior (Klennert et al., 1983). Happiness, for instance, may encourage others to continue their current course of action, whereas anger may serve as a call for behavioral adjustment (Cacioppo & Gardner, 1999; Fischer & Roseman, 2007).

We propose that in making sense of fuzzy social decision-making situations so as to act in a strategically wise and normatively appropriate fashion, individuals consider emotions as vital sources of information. When pondering whether and to what extent to cooperate and help others or to compete with and exploit them, individuals implicitly or explicitly, unconsciously or deliberately, use their own and their partner's emotions to inform their behavior. This broad proposition is further developed below, and examined in terms of the available research evidence.



4. THE EASI MODEL

The EASI model is grounded in the two basic assumptions outlined above: that individuals use other's emotions to make sense of fuzzy situations; and that the interpersonal effects of emotions are shaped by the

cooperative or competitive nature of the situation. The model posits that interpersonal emotional influence occurs via inferential processes and/or affective reactions (Van Kleef, 2008, 2009). In the following sections, we specify what these processes entail, when they are likely to occur, and what the consequences are for the social decisions people make.

4.1. Inferential processes: Distilling information from others' emotions

Emotions arise as a result of an individual's conscious or unconscious evaluation (appraisal) of some event as positively or negatively relevant to a particular concern or goal (Frijda, 1986; Lazarus, 1991). Because specific emotions arise in specific situations, observing a particular emotion in another person provides relatively differentiated information about how that person regards the situation. Such specific information is not provided by positive or negative moods, which only indicate whether things are generally going well or not. For instance, according to appraisal theories (e.g., Frijda, 1986; Lazarus, 1991; Roseman, 1984; Scherer et al., 2001; Smith et al., 1993), happiness arises when goals have been met (or good progress is being made toward attaining them) and expectations are positive. Expressions of happiness therefore signal that the environment is appraised as favorable and benign. Anger arises when a person's goals are being frustrated and s/he blames someone else for it. Expressions of anger therefore signal appraisals of goal blockage and other blame. Sadness arises when one faces irrevocable loss and experiences low coping potential. Expressions of sadness therefore signal appraisals of lack of control and helplessness. Guilt arises when one feels that one has transgressed some social norm or moral imperative. Expressions of guilt therefore signal that one feels bad about one's misdemeanor and imply that one is motivated to make amends.

We propose that individuals use the information provided by others' emotional expressions as inputs to their social decisions. Early work on social referencing indicates that such processes are already evident in infants. In a classic series of studies, infants were more likely to cross a visual cliff when their mother smiled at them than when she looked fearful (Klinnert et al., 1983). Presumably the mother's emotional displays signaled that the environment was safe (happiness) or unsafe (fear), which informed the infant's behavior. Such processes are functional in social decision making because the information individuals distill from their interaction partner's emotional expressions helps them to make sense of a fuzzy situation in which the implications of the setting and the goals, desires, and intentions of the other are imperfectly understood. The other's emotional expressions add to the individual's understanding of the situation, and thereby help the individual to develop an adaptive course of action.

We propose that, when sufficiently motivated, individuals distill complex and highly useful pieces of information from their counterpart's emotional expressions. Returning to the previous examples, expressions of happiness signal that the other is satisfied with the way things are going. This makes it unlikely that the other will resort to contentious behavior to get his or her way—strategically valuable information in uncertain social situations. Conversely, anger signals frustration of goals and other blame. When one is the target of an anger expression, one may infer that one did something wrong and this inference may in turn inform behavior (e.g., apologizing, changing one's conduct, acceding to the other's wishes). Following the same logic, observers of sad displays may infer that the expresser is in need of help, and observers of guilty expressions may infer that the other is motivated to make up for his or her transgression.

4.2. Affective reactions: Emotional contagion, affect infusion, and mood management

Emotional expressions can also wield interpersonal influence by eliciting affective reactions in observers (Van Kleef, 2009). Others' emotions may engender emotional contagion (Hatfield et al., 1994)—the tendency to unintentionally and automatically “catch” other people's emotions through their facial expressions, vocalizations, postures, or bodily movements (e.g., Anderson et al., 2003; Hawk et al., 2009; Hess & Blairy, 2001; Neumann & Strack, 2000; Wild et al., 2001), or through verbal expressions of emotion (e.g., in computer-mediated interaction; Friedman et al., 2004; Thompson & Nadler, 2002; Van Kleef et al., 2004a).

When people catch others' emotions, the resulting feeling state may influence judgments and decisions via different types of affect infusion (cf. Forgas, 1995). First, individuals may (mis)attribute the affective state to the situation at hand, using their feelings as input to their social judgments and decisions—a “how do I feel about it?” heuristic (i.e., affect-as-information; Schwarz & Clore, 1983). If they catch others' happiness and thereby come to experience positive feelings, they may judge the situation as safe and free from problems, which allows for generosity and exploration rather than rigid exploitation (Ashby et al., 1999; Baas et al., 2008). Second, the emerging affective state may selectively prime related ideas and memories that are part of an associative network, thereby facilitating their use when planning and executing behavior (i.e., affect priming; Bower, 1981; Isen et al., 1978). For example, individuals working with a partner on a joint task may catch their partner's happiness, causing them to selectively focus on the partner's cooperative efforts, which may lead them to increase their own cooperation. In a classic study, Carnevale and Isen (1986) manipulated the mood of negotiating pairs. Half the pairs were put into a positive mood by giving them a bag of candy and having them read funny cartoons prior to

the negotiation; the other half did not receive these treatments. Being in a happy mood facilitated cooperative information exchange among negotiators, which helped them to craft creative solutions that allowed both sides to settle for something beyond a 50–50 split (i.e., they realized the “integrative potential” of the negotiation).

In addition to these different forms of affect infusion, the emotions individuals catch from their counterparts can influence social decisions through mood maintenance and negative state relief. The core assumption here is that people strive to promote and maintain positive mood states and to avoid experiencing negative mood states (Carlson et al., 1988; Clark & Isen, 1982). This basic drive motivates people in a negative mood to engage in behaviors associated with positive feelings (e.g., helping others) in order to relieve their negative feeling state (e.g., Cialdini et al., 1973; Schaller & Cialdini, 1988). Likewise, individuals in a positive mood are motivated to exhibit behaviors that produce positive feelings and to abstain from activities that entail the risk of spoiling the good mood (i.e., positive mood maintenance; Wegener & Petty, 1994). In the current context, this means that when one’s partner feels happy, one may catch the partner’s happiness and become motivated to maintain the positive feeling by acting in a friendly and generous way. Similarly, when the other expresses sadness, one may become equally somber through emotional contagion and become motivated to relieve oneself of the negative feelings by acting generously.

4.3. Dual functions: Inferential processes and affective reactions

Figure 2.1 depicts the EASI model and the two processes that lie at the heart of it: inferential processes and affective reactions. Inferential processes and affective reactions are distinct but mutually influential, and they may relate to one another in different ways (Van Kleef, 2009). In some cases, inferences and affective reactions lead to the same behavior. For example, the distress of a significant other signals that help is required (inference) but also triggers negative feelings in the observer (affective reaction), both of which foster supportive behavior (e.g., Clark et al., 1996). In other cases, however, inferences and affective reactions are likely to motivate opposite behaviors. For instance, when faced with an angry opponent in a negotiation, one’s own reciprocal anger may provoke competition and retaliation, but one’s inference that the other is upset because his or her limits have been reached may encourage strategic cooperation (Van Kleef et al., 2004a). Which process takes precedence in guiding social decisions depends on two critical moderators, which follow from the two basic assumptions underlying our analysis.

First, we propose that the cooperative versus competitive nature of the situation fundamentally changes the meaning and social consequences of emotional expressions. Specifically, as elaborated in greater detail below, we

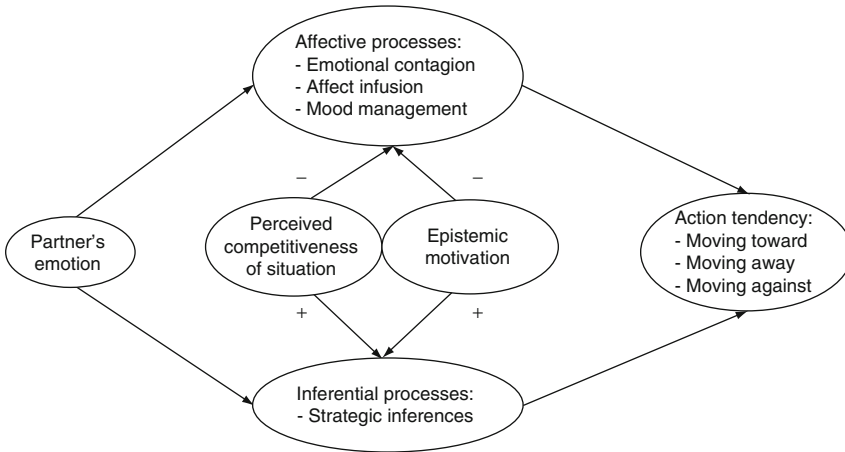


Figure 2.1 The Emotions as Social Information (EASI) model.

posit that affective reactions become more predictive of social decisions to the extent that the situation is (perceived as) cooperative, and strategic inferences become more predictive of social decisions to the extent that the situation is (perceived as) competitive. Second, because emotional expressions carry information that potentially disambiguates fuzzy and uncertain social situations, we propose that the interpersonal effects of emotions depend on observers' motivation to consider and process the information conveyed by the other's emotional expressions. Specifically, we propose that inferential processes become more predictive of social decisions to the extent that observers are motivated to scrutinize the meaning of their counterpart's emotional expressions, and that affective reactions become more predictive of social decisions to the extent that such motivation is reduced (see Fig. 2.1). Thus, both processes inform and guide observers' behavior, but under different circumstances. In other words, both inferences and affective reactions may be regarded as *functional*, but they are functional for different reasons, and in different situations. In the next two sections, we elaborate on these two core moderators—the (perceived) cooperativeness of the setting in which emotions are expressed and observed, and the perceiver's motivation to engage in deep and deliberate information processing.

4.4. Differential responses to discrete emotions in cooperative versus competitive settings

The (perceived) cooperative or competitive nature of the social setting is a first crucial determinant of the mediating processes involved in the interpersonal effects of emotions in social decision making. We propose that when parties'

goals are cooperatively linked, they are more likely to come to feel each other's emotions and to be influenced by subsequent affect infusion and mood management processes. Indeed, evidence suggests that emotional contagion is more prevalent in cooperative rather than in competitive situations. In a study involving professional cricket teams, [Totterdell \(2000\)](#) found that players' moods were more strongly correlated with the aggregate mood of their *own* team members (with whom they had a cooperative relationship) than with the mood of the other team's members (with whom they had a competitive relationship). Furthermore, [Lanzetta and Englis \(1989\)](#) demonstrated that individuals who anticipated a cooperative encounter with another person showed empathic emotional reactions to that person's displays of pleasure or distress (reflected in congruent facial muscle activation and levels of autonomic arousal), whereas individuals who expected a competitive encounter showed counterempathic reactions (reflected in opposite patterns of facial muscle activation and autonomic arousal).

In addition to the lower likelihood of emotional contagion and concomitant affect infusion and mood management processes, competitive situations are typically characterized by lower levels of trust (e.g., [Deutsch, 1973](#)). Therefore, any information that reveals a counterpart's intentions takes on heightened strategic importance. A counterpart's emotions provide strategic information because they signal what is important to the counterpart, how he or she feels about the situation, and what steps he or she plans to take ([Van Kleef, 2009](#)). We therefore propose that social decisions in competitive situations are driven less by affective reactions and more by the strategic inferences that decision makers draw from their counterpart's emotional expressions. This is not to say that emotional contagion does not occur at all. It is less prevalent, however, and if it occurs it is likely to be only weakly related to social decisions because the effects of the individual's own emotional state are overruled by strategic considerations ([Van Kleef et al., 2004a](#)).

We focus our analysis on four classes of emotions that frequently arise in social decision making and that have received research attention. We classify these emotions in terms of their main signaling functions and develop propositions regarding how recipients react to these emotions as a function of the perceived cooperativeness versus competitiveness of the situation. These propositions are summarized in [Table 2.1](#). Note that the distinction between cooperative and competitive settings is not a strict dichotomy, and that situations may fall anywhere on a continuum from purely cooperative to purely competitive ([Deutsch, 1973](#); [Schelling, 1960](#)). As such, the action tendencies highlighted in [Table 2.1](#) should not be interpreted as occurring *only* in cooperative or competitive settings, but as becoming *more or less prominent* as situations become more or less cooperative or competitive.

We conceptualize the recipient's action tendencies in terms of Horney's classic distinction between "moving towards," "moving away," and "moving

Table 2.1 Social signals of discrete emotions and dominant behavioral reactions in cooperative versus competitive settings

Emotion	Social signal	Dominant action tendencies and associated behavior	
		<i>Cooperative setting</i>	<i>Competitive setting</i>
Happiness, joy, contentment	Opportunity, affiliation	Move toward => Increased cooperation	Move against => Increased competition
Anger, frustration, irritation	Dominance, aggression	Move against/away => Reduced cooperation/inaction	Move toward/away => Increased cooperation/inaction
Sadness, distress, disappointment, worry	Supplication	Move toward => Increased cooperation	Move away/against => Inaction/increased competition
Guilt, regret, embarrassment	Appeasement	Move away/toward => Inaction/reduced competition	Move against => Increased competition

against” (Horney, 1945; also see Deutsch, 1973). *Moving toward* captures cooperative activities such as making concessions in a negotiation, donating money to a charity, making a cooperative decision in a prisoner’s dilemma game, offering a fair division of resources in ultimatum bargaining, and so on. *Moving away* captures what Lewin (1951) referred to as “leaving the field,” and includes ending the relationship, avoiding the interaction partner, suppressing thoughts about the situation, refusing to take action, and adopting a passive stance. *Moving against*, finally, includes behaviors such as taking a firm stance in bargaining, refusing to make concessions, engaging in deception, stealing a beggar’s money, and making a noncooperative decision in a social dilemma. As we will see later, most empirical work on emotion in social decision making has focused on moving toward and moving against tendencies.

The first class of emotions in Table 2.1 consists of positive goal-congruent emotions, which arise when events are congruent with an individual’s concerns. A prominent example is happiness, which “occurs when we think we are making reasonable progress towards the realization of our goals” (Lazarus, 1991, p. 267). It is associated with a state of pleasure, security, and generosity, which is manifested in outgoingness and approach-related behaviors (Lazarus, 1991). It is also associated with well-being and a broadening of momentary thought-action repertoires, which enables individuals to identify and seize opportunities to build enduring (social) resources (Fredrickson, 2001). Happiness may further signal a desire to affiliate, socialize, and play (Fridlund, 1994). Several scholars have argued that smiles are often communicative acts (Fridlund, 1991; Hess et al., 1995; Jakobs et al., 1999a,b; Kraut & Johnston, 1979; Manstead et al., 1999); indeed, people sometimes knowingly smile in order to get others to like them (Godfrey et al., 1986; Rosenfeld, 1966). We thus summarize the main social signals of happiness and related emotions as *affiliation and opportunity*.

Such signals, we propose, have fundamentally different effects in cooperative versus competitive settings. In cooperative settings, where parties’ goals are positively correlated, one party’s happiness implies that the other also has reason to be happy. In such settings the strategic value of the counterpart’s happiness is relatively low, because parties are likely to trust one another, to communicate openly, and to work together to achieve their shared goals (De Dreu et al., 2007). As a result, the happiness is likely to spread from one person to the other and to influence social decision making via infusion of positive affect (cf. Forgas, 1995). Thus, in cooperative settings, happiness elicits “moving toward” tendencies and cooperative behavior. By contrast, in competitive settings, a partner’s happiness may be taken as a sign that the other is gaining at one’s own expense (Lanzetta & Englis, 1989), triggering “moving against” tendencies. Furthermore, the implication that the other is (close to) attaining his or her goals and being satisfied implies that one may be able to get more for oneself. In competitive settings, expressions of happiness may be perceived as a sign of weakness

(Van Kleef et al., 2004a). When one's opponent appears soft, this leaves scope for placing high demands on oneself without risking negative consequences. Thus, we propose, in cooperative settings a partner's happiness engenders "moving towards" tendencies and cooperative and helpful behavior, but in competitive settings it triggers "moving against" tendencies and competitive and exploitative behavior.

The second class of emotions listed in Table 2.1 consists of negative emotions associated with the (deliberate) frustration of goals. A prominent example is anger, which arises when a person's goals are frustrated and s/he blames someone else for it. Anger is associated with a tendency to aggress against the person (or object) seen as responsible for the goal blockage and with a desire to bring about change (Averill, 1982; Fischer & Roseman, 2007). Anger is facilitated when the individual perceives attack as a viable option to restore the unfavorable situation (Lazarus, 1991). Perhaps in part because of the associated action tendency of attack, anger signals power and dominance (Tiedens, 2001). Thus, the main social signals of anger are *dominance and aggression*.

Signaling dominance and aggression through anger and frustration is likely to have different effects in cooperative and competitive settings. As can be seen in Table 2.1, we propose that the most likely consequence of anger and related emotions in cooperative settings is reduced cooperation. First, anger signals aggression and blame, and such signals are not conducive to favorable interpersonal relations and fruitful collaboration. Second, the spreading of anger from one person to another may undermine cooperation via affect infusion (Forgas, 1995). Although expressions of anger in cooperative settings may motivate parties to withdraw from the situation (move away), this is often not a feasible option in situations of mutual dependence, leaving reduced cooperation (move against) as the most likely consequence of anger. In competitive settings, too, targets of anger may feel like leaving the situation but lack the leeway to do so. Because anger signals aggression and dominance, adversaries may feel pressured to give in to the angry party's desires so as to prevent actual aggression or other negative consequences (e.g., failure to reach an agreement)—risks that are more imminent in competitive as opposed to cooperative settings. In short, even though individuals who are faced with another's anger may be motivated to leave the situation in both cooperative and competitive settings, mutual interdependence often eliminates this option. Thus, expressions of anger are likely to trigger competition in cooperative settings and cooperation in competitive settings.

The third class of emotions arises when individuals face a loss (sadness), when outcomes fall short of expectations (disappointment), or when negative events may occur (worry, fear). Although these emotions have different secondary appraisal components (e.g., Lazarus, 1991; Smith et al., 1993), they may be thought of as sharing a "supplication" function; that is, they serve as a call for help (Clark et al., 1996; Eisenberg, 2000; Eisenberg &

Miller, 1987; Kennedy-Moore & Watson, 2001; Timmers et al., 1998). Sadness, for instance, increases perceptions of neediness and dependency (Clark & Taraban, 1991) and both worry and fear communicate a need for assistance (Côté, 2005; Eisenberg, 2000; Kennedy-Moore & Watson, 2001; Yee & Greenberg, 1998). Such signals are functional in that they can trigger helping and support from observers (Clark et al., 1996). Thus, the main social function of these emotions is *supplication*.

Supplication emotions are more likely to elicit support in cooperative settings than in competitive settings (see also Table 2.1). In cooperative settings, individuals typically care about each other's outcomes, and they are therefore motivated to support an interaction partner who feels disadvantaged and calls for help. Such benevolent behavior is less likely in competitive settings, where signs of weakness could even be taken as encouragement to go for a definitive win. Additionally, the spreading of sadness via emotional contagion—which is more likely in cooperative settings than in competitive settings—may increase cooperation through mood management processes. Thus, we propose that the main action tendency associated with supplication in cooperative settings is to “move toward” and cooperate, whereas the most likely tendencies in competitive settings are to “move away” or “move against.”

The fourth and final class of emotions listed in Table 2.1—guilt, interpersonal regret, and embarrassment—occur when one feels that one has transgressed a social norm or moral imperative (Lazarus, 1991). In social decision-making situations, guilt and interpersonal regret may arise when one claimed too much or offered too little to a counterpart (Van Kleef et al., 2006a). Such emotions serve an “appeasement” function (Baumeister et al., 1994; Keltner & Buswell, 1997). Feeling guilty is a way of showing that one cares and is willing to make amends for a transgression (Baumeister et al., 1994). Similarly, embarrassment signals that one feels bad about a *faux pas* and implies that one will conform to social norms in the future (Goffman, 1967; Keltner & Buswell, 1997). Finally, interpersonal regret signals that one is committed to engaging in “behavioral repair work” or “ameliorative behavior” (Gilovich & Medvec, 1995). In sum, the main signal conveyed by emotions such as guilt, embarrassment, and interpersonal regret is *appeasement*.

We propose that these emotions, too, have different consequences in cooperative versus competitive situations. In cooperative situations, signs of appeasement are likely to contribute to the quality of cooperative relationships by signaling remorse and caring. As such, appeasement emotions can be expected to reduce competitive tendencies that might otherwise arise due to a social transgression. In competitive settings, by contrast, appeasement emotions may invite competition and exploitation. Because such emotions signal that the transgressor is willing to compensate, it becomes less necessary to make concessions oneself; instead, one can wait for the other to give in and exploit the situation to further one's own goals.

4.5. Epistemic motivation and the processing of emotional information

The second crucial determinant of the interpersonal effects of emotional expressions in social decision making, and the processes that drive them, is the individual's information processing motivation. We propose that the more thorough the information processing, the stronger will be the predictive power of strategic inferences relative to affective reactions; the shallower the information processing, the stronger will be the relative predictive strength of affective reactions (see [Van Kleef, 2009](#)). Information processing depth depends on the individual's *epistemic motivation*, that is, his or her willingness to expend effort to achieve a rich and accurate understanding of the world, including interdependent others ([De Dreu & Carnevale, 2003](#); [De Dreu et al., 2008b](#); [Kruglanski, 1989](#); [Kruglanski et al., 2006](#)). Individuals with higher epistemic motivation have lower confidence in their knowledge and experience less certainty. To render judgments and make decisions, they tend to engage in rather deliberate, systematic information search and processing ([De Dreu et al., 2008b](#); for similar accounts and models, see, e.g., [Chaiken & Trope, 1999](#); [Evans, 2008](#); [Kruglanski & Webster, 1996](#); [Smith & DeCoster, 2000](#)).

Epistemic motivation is partly rooted in temperament and socialization, so that individuals with higher need for cognition, lower need for cognitive closure, lower personal need for structure, and higher openness to experience have chronically higher epistemic motivation, and therefore engage in more deliberate information processing ([De Dreu & Carnevale, 2003](#); [De Dreu et al., 2008b](#); [Homan et al., 2008](#); [Neuberg & Newsom, 1993](#); [Webster & Kruglanski, 1994](#); also see [Chaiken, 1987](#); [Petty & Cacioppo, 1986](#)). In current terms, these individuals are more likely to reflect on their partner's emotions and therefore the effects of their partner's emotional expressions are more likely to be mediated by deliberate inferential processes than by relatively automatic affective reactions.

Epistemic motivation also depends on situational constraints. Power differences, (process) accountability, time pressure, fatigue, and environmental noise are factors known to affect the individual's epistemic motivation and concomitant tendencies to process information deliberately and systematically ([De Dreu et al., 2008b](#); [Fiske & Neuberg, 1990](#); [Kruglanski et al., 2006](#); [Tetlock, 1992](#)). Thus, individuals with low rather than high power and those who feel accountable have higher epistemic motivation and engage in more systematic information processing (e.g., [De Dreu & Van Kleef, 2004](#); [Fiske, 1993](#); [Lerner & Tetlock, 1999](#)). Individuals facing acute time pressure, who are fatigued, or who are working under environmental noise experience increased need for closure, have lower epistemic motivation, and engage in more superficial and less deliberate information processing ([De Dreu, 2003](#);

De Grada et al., 1999; Van Kleef et al., 2004b). In terms of our present argument, these individuals are less likely to be influenced by their partner's emotions via deliberate inferential processes than via relatively automatic affective processes.

Before moving on, it is important to consider the relation between the (perceived) competitiveness of the situation and the perceiver's epistemic motivation. Because personal outcomes are more easily endangered in competitive settings than in cooperative settings, perceivers may have stronger motivation to develop an accurate understanding of their situation. Thus, perceived competitiveness in and of itself may heighten epistemic motivation. However, there is evidence that perceived competitiveness and epistemic motivation are not necessarily correlated. De Dreu et al. (1999) reported small and nonsignificant correlations between competitive predisposition and proxies of epistemic motivation such as need for cognition and need for cognitive closure. Furthermore, various studies in which cooperative motivation and epistemic motivation were studied in conjunction found the two constructs to be independent (e.g., De Dreu et al., 2000, 2006). In short, although it is conceivable that (perceived) competitiveness of the situation and epistemic motivation covary under particular circumstances, the two variables are conceptually and empirically distinct.

4.6. Summary of model and propositions

The EASI model provides a framework for understanding the effects of an interdependent other's emotional expressions on a decision maker's tendency to move toward, away from, or against that other. We highlighted four discrete classes of emotions that individuals may experience and express in social decision making, and proposed that these emotions convey distinct social signals, including opportunity/affiliation (happiness and related emotions), dominance/aggression (anger and related emotions), supplication (sadness and related emotions), and appeasement (guilt and related emotions). These signals may be picked up and subjected to inferential analysis or, alternatively, processed in a more automatic way involving emotional contagion and subsequent affect infusion or mood management. We propose that inferential processes take precedence over affective processes when the situation is perceived as predominantly competitive and/or recipients have high epistemic motivation and a concomitant tendency to engage in deliberate information processing. Conversely, we propose that affective reactions take precedence over inferential processes when the situation is perceived as predominantly cooperative and/or epistemic motivation is low. In the following sections, we consider the empirical evidence for our model and its propositions, discussing research in cooperative and competitive settings in turn.



5. THE INTERPERSONAL EFFECTS OF EMOTIONS IN COOPERATIVE SITUATIONS

In this section, we review pertinent research on the interpersonal effects of emotions in predominantly cooperative settings. The section is organized in terms of the main social signals that are conveyed by the four classes of emotions summarized in [Table 2.1](#). We examine the extant empirical evidence for each of the propositions that can be derived from the table. It is worth noting in advance that although some of the theoretical propositions in [Table 2.1](#) refer to “moving away” tendencies, such behavioral responses to other’s emotions are rarely studied. We return to this point toward the end of this section.

5.1. Signs of opportunity and affiliation (e.g., happiness) facilitate cooperation

A general hypothesis that can be derived from our model is that in cooperative settings happiness and related emotions trigger a tendency to “move toward” the expresser, which, in the context of social decision making, should result in increased cooperation. In keeping with this hypothesis, research shows that expressions of happiness are associated with increased liking ([Clark & Taraban, 1991](#); [Shaver et al., 1987](#)). People prefer being with and working with happy people ([Lazarus, 1991](#)). Accordingly, studies have shown that expressing happiness and related positive emotions can have favorable outcomes at work in terms of supervisor evaluation and coworker support ([Staw et al., 1994](#)). Perhaps for these reasons, people have been reported to exaggerate their expressions of positive emotions toward their boss ([Duck, 1986](#)) and to strategically present displays of happiness (e.g., smiles) for purposes of ingratiation or flattery ([Clark et al., 1996](#)).

More direct tests of the happiness–cooperation hypothesis are provided by [Krumhuber and colleagues](#). [Krumhuber et al. \(2009\)](#) found that female interviewees who displayed authentic smiles during a job interview were rated more positively and were more often short-listed for the job than were interviewees who displayed no smiles or inauthentic smiles. Moreover, in another study, participants involved in a trust game were more likely to trust counterparts who displayed an authentic smile compared to those who displayed an inauthentic smile or no smile. As displayed in [Fig. 2.2](#), participants cooperated more with authentically smiling counterparts ([Krumhuber et al., 2007](#)).

The happiness–cooperation hypothesis is further supported by a study on group decision making by [Barsade \(2002\)](#). She found that laboratory groups including a happy or serene confederate developed more pleasant group emotions, which in turn promoted cooperation and reduced conflict in the group. Along similar lines, several studies showed that when team

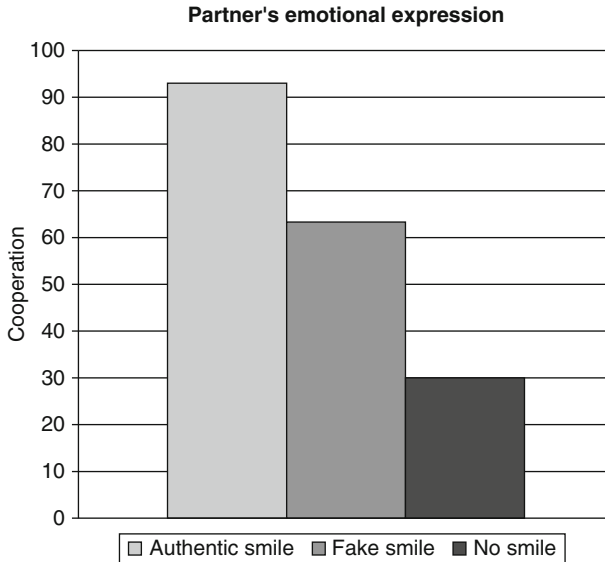


Figure 2.2 Cooperation in a trust game as a function of the partner's emotional expression (based on data reported in [Krumhuber et al., 2007](#)).

leaders express positive emotions they are seen as more effective ([Gaddis et al., 2004](#)) and charismatic ([Bono & Ilies, 2006](#)), and they elicit more prosocial behavior ([George & Bettenhausen, 1990](#)), creativity ([Visser et al., 2009](#)), and better group performance ([Gaddis et al., 2004](#); [George, 1995](#); [Van Kleef et al., 2009](#)). For example, [Sy et al. \(2005\)](#) had participants perform a tent-building exercise in groups while blind-folded. They were coached by a leader who had just viewed a film clip inducing either happiness or not. The authors found that teams exposed to a happy leader developed a positive mood themselves, and as a result cooperated better.

To summarize, in cooperative settings such as job interviews, teamwork, and leader–follower exchanges there is converging evidence supporting the hypothesis that expressing positive emotions such as happiness promotes trust, liking, affiliation, and cooperation. Several of these studies also corroborate the notion that these effects are mediated by emotional contagion and subsequent affect infusion processes (e.g., [Barsade, 2002](#); [Sy et al., 2005](#); [Van Kleef et al., 2009](#); [Visser et al., 2009](#)).

5.2. Signs of dominance and aggression (e.g., anger) undermine cooperation

Few studies have directly addressed the interpersonal effects of anger in cooperative settings. The studies that have been conducted support the idea that the dominant response to anger in cooperative settings is reduced

cooperation. In the group decision making study by Barsade (2002) described above, groups that included an angry confederate tended to catch the confederate's anger, and their resulting negative affect reduced cooperation and increased conflict (see also George, 1990). Other studies found that exposure to others' anger can produce emotional exhaustion and hamper performance (Rafaeli et al., 2009), especially when such affect is shared in the group (Barsade et al., 2000). These studies implicate emotional contagion as a mediator of the relationship between anger expression and social decision making.

In an illustrative study described by Clark and colleagues (1996), participants were invited to the lab supposedly to participate in a text-proofing experiment. Participants were led to believe that they would work in a group of three, and that one participant could leave early while the other two would proofread each other's work. The experimenter explained to the participant that the other two participants were hoping that they would be allowed to leave early, and that the participant could choose who would be dismissed and who would have to stay. Participants then received the work of the other participants, which included ratings of how they were supposedly feeling at the time. The results showed that participants who were described as angry were less likely to be selected to leave early. This finding supports the idea that, in predominantly cooperative situations, signs of anger undermine cooperation.

There is some evidence, consistent with the EASI model in Fig. 2.1, that these effects of other's anger expressions are moderated by the perceiver's epistemic motivation. In one study, Van Kleef et al. (2010) engaged the participant in the role of "generator of ideas" working with another participant in the role of "evaluator." After the participant had generated ideas, a prerecorded video message from the evaluator (in fact, a trained actor) appeared on the participant's computer screen in which he provided feedback and tips in an angry or neutral way. Participants with low epistemic motivation (operationalized in terms of personal need for structure; Neuberg & Newsom, 1993) were less willing to cooperate after their colleague had expressed anger rather than no emotion, and consequently they generated fewer ideas. Participants with high epistemic motivation, however, became more motivated to cooperate on the task after their colleague had expressed anger, and they generated more ideas.

Another study yielded compatible results. Van Kleef et al. (2009) investigated the effects of leader emotional displays and follower epistemic motivation on team cooperation and performance. Four-person teams collaborated on a task, during which they were supposedly observed by their leader via a video camera setup. After a while, the leader (a trained actor) appeared on a video screen and provided standardized feedback and tips to the team, expressing either anger or happiness by means of facial

expressions, vocal intonation, and bodily postures. Members of teams with an angry leader also became angry themselves, and members of teams with a happy leader became happy, indicating that emotional contagion occurred. There were also effects on cooperative team performance, as shown in [Fig. 2.3](#). Followers with low epistemic motivation (again measured in terms of need for structure; [Neuberg & Newsom, 1993](#)) worked less well together and performed less well due to their negative affective state. Followers with high epistemic motivation, by contrast, inferred from the leader's anger that they were performing suboptimally, leading them to increase their efforts and to exhibit better cooperative performance.

Taken together, and in keeping with the EASI model, there is converging evidence that in cooperative settings such as teamwork and leader–follower exchanges, people typically respond to their partner's anger and frustration by reduced cooperativeness and increased tendencies to move against their partner. These tendencies are mediated by affective reactions rather than inferential processes. This pattern changes when epistemic motivation is increased: When targets have high epistemic motivation, expressions of anger trigger inferential processes in them that stimulate task engagement and cooperative behavior.

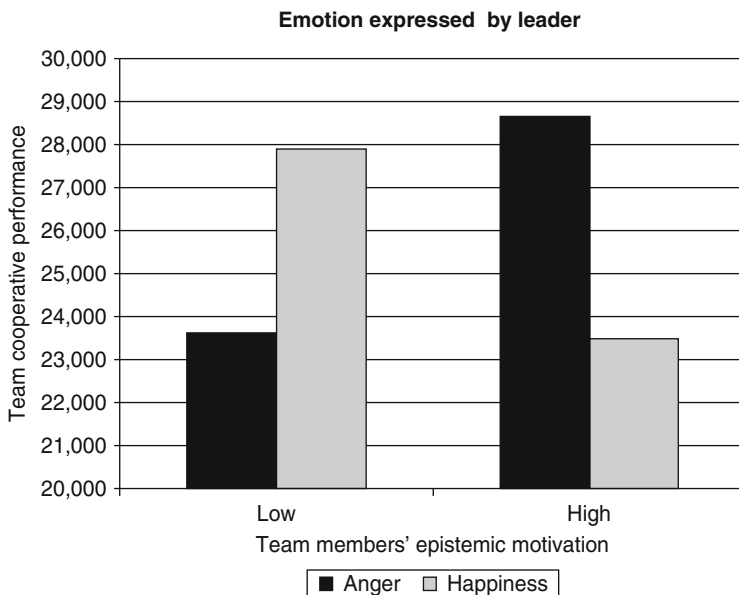


Figure 2.3 Team cooperative performance as a function of leader's expression of anger or happiness and team members' epistemic motivation (based on data reported in [Van Kleef et al., 2009](#)).

5.3. Signs of supplication (e.g., sadness, distress, disappointment) invite cooperation

Several pieces of evidence converge to support the idea that, in cooperative settings, sadness and related supplication emotions trigger a tendency to “move toward” the expresser, resulting in increased cooperation and support. Expressions of sadness (e.g., crying) and worry increase perceptions of neediness and dependency (Clark & Taraban, 1991) and evoke helping behavior in both children (Barnett et al., 1982) and adults (Clark et al., 1987; Labott et al., 1991; Yee & Greenberg, 1998). For example, Van Kleef and colleagues (2008) prompted same-sex dyads of unacquainted individuals to talk about instances in their life that had caused them a great deal of suffering and distress. Participants who were motivated to get to know and collaborate with their counterpart and who were therefore in a cooperative mindset responded more compassionately and supportively to their partner’s distress than did those who were less motivated to befriend their partner. Interestingly, individuals who relayed a story of suffering to a conversation partner who was motivated to invest emotionally in the conversation experienced more trust and understanding than did those whose partner was not so motivated, indicating that supportive responses to another’s suffering contribute to the quality of cooperative interpersonal relationships.

More direct evidence for the supplication–cooperation hypothesis comes from the text-proofing experiment by Clark et al. (1996) described earlier. They found that fellow participants who were described as sad were significantly more likely to be selected by participants to leave the experiment early (something they had indicated that they would prefer), compared to those who were not described as sad. Interestingly, Clark et al. (1987) further demonstrated that expressions of sadness had stronger effects on helping among individuals desiring a “communal relationship” than among those desiring a more businesslike, “exchange relationship,” suggesting that supplication is a more effective strategy in cooperative settings than in more competitive settings.

Compatible findings were obtained in a negotiation study by Van Kleef and colleagues (2006a). They found that negotiators who thought they were interacting with a cooperative partner (as manipulated through bogus feedback about the other’s personality) made larger concessions when the other verbally expressed disappointment (rather than no emotion) regarding his or her outcomes, whereas those who thought they were dealing with a competitive counterpart did not yield when confronted with the other’s disappointment. Figure 2.4 shows the average demands participants made across the six rounds of the negotiation. These findings lend further credence to our assertion that supplication triggers a stronger tendency to “move toward” in cooperative as opposed to competitive settings.

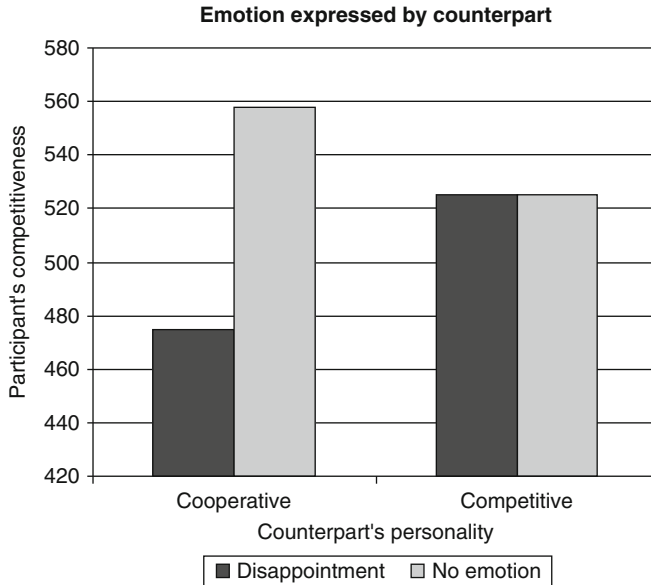


Figure 2.4 Competitiveness in a negotiation as a function of counterpart's expression of disappointment and counterpart's cooperative versus competitive personality (based on data reported in [Van Kleef et al., 2006a](#); Exp. 3).

5.4. Signs of appeasement (e.g., guilt, regret, embarrassment) decrease competition

According to our analysis in [Table 2.1](#), guilt and related appeasement emotions should, in cooperative settings, trigger a tendency to “move toward” the expresser, resulting in increased relationship quality and reduced competition. Several studies support this idea (e.g., [Baumeister et al., 1994](#); [Keltner & Buswell, 1997](#); [Leith & Baumeister, 1998](#); [Lewis, 2000](#)). Feeling guilty is a way of showing that one cares and is willing to make amends for a transgression ([Baumeister et al., 1994](#)). Similarly, embarrassment signals that one feels bad about a *faux pas* and implies that one will conform to social norms in the future ([Goffman, 1967](#); [Keltner, 1995](#); [Keltner & Anderson, 2000](#); [Keltner & Buswell, 1997](#); [Keltner et al., 1997](#); [Leary et al., 1992](#)). A study by [Semin and Manstead \(1982\)](#) showed that displays of embarrassment after a social transgression had effects on social evaluations that were as positive as restitution behavior, suggesting that signs of embarrassment can help to maintain or restore cooperative relations.

Cooperative relationships may also be restored by expressing interpersonal regret, which signals that one is committed to repairing the damage done ([Gilovich & Medvec, 1995](#)). This was illustrated in a study by

Zeelenberg et al. (1998), which demonstrated that feelings of interpersonal regret can indeed motivate “behavioral repair work.” In one study, they coded cases from a Dutch television show called “I Am Sorry”—a show that provides people with the opportunity to undo regrets arising in social relationships by apologizing and offering flowers to the target of the regret. They found that apologies were indeed often motivated by interpersonal regrets, especially those stemming from action rather than inaction. Apologies, in turn, signal interpersonal sensitivity and a willingness to appreciate another person’s perspective—important relationship repairing qualities (Steiner, 2000). Empirical evidence indicates that apologizing after a transgression may reduce blame and punishment (Darby & Schlenker, 1982), increase forgiveness (Bachman & Guerrero, 2006), reduce aggression (Ohbuchi et al., 1989), and enhance liking and positive impressions (Darby & Schlenker, 1982; Ohbuchi et al., 1989). Thus, just like expressing guilt and embarrassment, expressing regret and making an apology can prevent competitive and retaliatory responses and help sustain cooperative relations.

5.5. Emerging patterns in cooperative settings

Several conclusions emerge from our review of research in cooperative settings. First, expressions of positive emotions such as happiness facilitate cooperation, at least in part via emotional contagion. Second, expressions of negative emotions such as anger typically undermine cooperation (again at least in part via emotional contagion), except when recipients have high epistemic motivation and infer from the other’s anger that they should invest more in the cooperative effort. Third, expressions of supplication emotions such as sadness, distress, and disappointment signal a need for support and thereby evoke cooperation. Fourth, appeasement emotions such as guilt, embarrassment, and interpersonal regret signal a concern for the other and thereby sustain cooperative relationships. These observations support the propositions of our model summarized in Table 2.1.

In addition, two broader patterns emerge that resonate with the two basic assumptions underlying our model. First, the available evidence points to a mediating role for affective rather than inferential processes in cooperative situations. Several studies indicate that emotional contagion and subsequent intrapersonal processes (i.e., affect infusion, mood management) are at least partly responsible for the interpersonal effects of emotional displays of happiness and sadness on social decision making (e.g., Barsade, 2002; Sy et al., 2005; Van Kleef et al., 2008). Few studies have found evidence of a role for inferential processes, and such inferences only seem to play a role in the case of anger and when individuals have high epistemic motivation (Van Kleef et al., 2009). As we will see below, this is quite different in the competitive domain, where the mediating role of inferential processes is much more apparent.

The second broad conclusion is that the effects of the emotions reviewed here cannot be understood in terms of their valence. For instance, expressions of happiness and of sadness both enhance cooperation, even though they differ in valence. Furthermore, anger has negative effects on cooperation whereas sadness and guilt have positive effects, even though they are all negatively valenced. This conclusion resonates with other observations about the effects of mood states that cannot be explained simply in terms of valence (e.g., [De Dreu et al., 2008a](#)). It is also consistent with our assumption that social decision makers use others' emotions to make sense of a fuzzy situation. Discrete emotions provide differentiated and fine-grained information to observers. Thus, individuals can use their partner's emotions to inform their social behavior, provided that they are sufficiently motivated to consider the implications of the other's emotion.

As noted earlier, few if any studies have examined tendencies to move away from one's partner, and thus some of the theoretical propositions in [Table 2.1](#) remain untested. Furthermore, past work has often focused on cooperation (vs. noncooperation) and thus inadvertently restricted the perceiver's behavioral repertoire. Although we have seen that in cooperative settings perceivers become less cooperative when their partner expresses anger, it is unclear whether such tendencies were not (partly) due to the fact that "moving away" options were simply not available. In leader–follower exchanges and in teamwork, there is often some opportunity to "move away," ranging from explicitly leaving the field (searching another job, asking for a change of role) to more implicit actions such as disengagement and reduced effort (which is probably what cause the reduced cooperation in some of the studies reviewed above). We suspect that in cooperative settings the presence versus absence of "moving away" possibilities may be of lesser importance when facing a happy or guilty partner because these emotion expressions strongly predispose the partner to cooperate and move toward the partner. When it comes to anger and frustration, however, the presence of a moving away possibility may have substantial behavioral repercussions. Here lies an important issue for future research.



6. THE INTERPERSONAL EFFECTS OF EMOTIONS IN COMPETITIVE SITUATIONS

In this section, we review research on the interpersonal effects of emotions in competitive situations. Like the preceding section on cooperative situations, our discussion is organized in terms of the four classes of emotions summarized in [Table 2.1](#) and their associated social signals and behavioral responses. We will again see a trend for research to ignore the perceiver's option to "move away." However, in contrast to the preceding section, some findings do speak to this tendency, if only indirectly.

6.1. Signs of opportunity and affiliation (e.g., happiness) invite competition

Unlike in cooperative settings, we propose that happiness and related emotions trigger a tendency to “move against” the expresser in competitive settings, resulting in increased competition. Most research on the interpersonal effects of emotions in competitive settings has focused on negotiation. This line of research began with a series of studies by Van Kleef and colleagues (2004a), who investigated the interpersonal effects of happiness and anger using a computer-mediated negotiation task. In the course of the negotiation, participants received information about their (simulated) opponent’s emotional state. For instance, the other would write that s/he was “really happy” or “really pissed off” with the way things were going. Negotiators who learned that their opponent was happy inferred that the opponent was lenient and “easy to get,” felt no need to concede to avoid impasse, and accordingly made tougher demands and smaller concessions than those who were confronted with a nonemotional or angry opponent. This initial study thus suggested that negotiators use their counterpart’s emotions as strategic information to inform their behavior.

More direct support for this notion was provided in a later set of studies, which demonstrated that the interpersonal effects of happiness and anger are moderated by the negotiator’s epistemic motivation and concomitant tendency to engage in thorough information processing (Van Kleef et al., 2004b). Specifically, negotiators were more strongly affected by their opponent’s expressed emotion when they had low need for cognitive closure, low time pressure, and low power (all conditions that heighten epistemic motivation; De Dreu & Carnevale, 2003). The interaction between the opponent’s emotional expression and time pressure is displayed in Fig. 2.5, which presents average demands across the six rounds of the negotiation. When time pressure was low, negotiators engaged in more thorough information processing and used their counterpart’s emotions as strategic information in their decision-making process, which led them to increase their demands when confronted with a happy rather than an angry opponent. By contrast, when time pressure was high, information processing was reduced, and the effects of the opponent’s emotional expressions were mitigated.

In another recent study, the implications of the use of a counterpart’s emotional expressions were examined in the context of an integrative negotiation task, in which a better joint outcome than a 50–50 split is possible if both parties give up on their lower priority issues and stand firm on their higher priority issues. Using both verbal and nonverbal manipulations of the counterpart’s emotion, this study showed that negotiators used their counterpart’s expressions of happiness (vs. anger) to infer that the other attached relatively low (rather than high) value to a particular issue. These inferences led them to stand firm on that high-value issue and to give in on

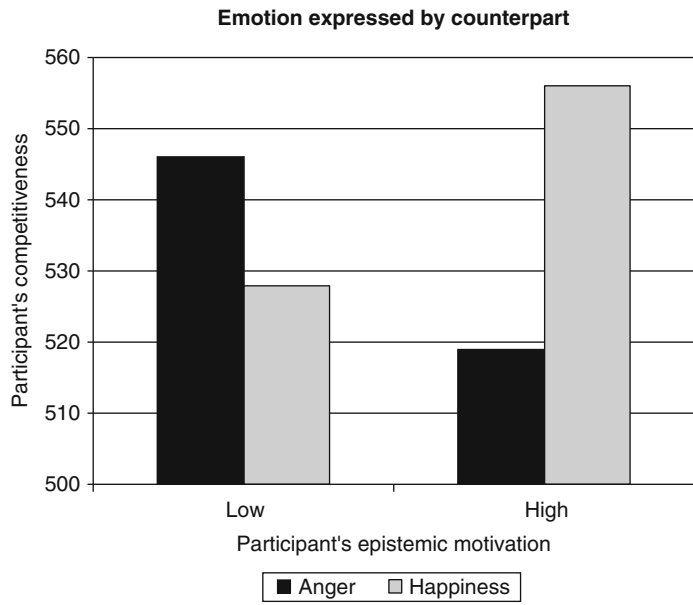


Figure 2.5 Competitiveness in a negotiation as a function of counterpart’s expression of anger or happiness and participant’s epistemic motivation (based on data reported in [Van Kleef et al., 2004b](#); Exp. 2).

those issues that appeared more important for the counterpart, thereby exploiting the integrative potential of the task ([Pietroni et al., 2008](#)).

To summarize, converging evidence suggests that in competitive settings such as bargaining and dispute resolution, expressing happiness and joy provokes inferential processes: Rather than catching the other’s happiness and responding cooperatively, perceivers think through the strategic implications of the other’s happiness. They infer that the other is doing well and may be ready to make concessions. There seems to be no pressing need to concede to a happy partner, so perceivers hold out and make relatively tough demands.

6.2. Signs of dominance and aggression (e.g., anger) induce cooperation

In [Table 2.1](#) we make the general prediction that, in competitive settings, anger and related emotions signaling dominance and aggression will trigger a tendency to “move toward” the expresser, resulting in increased cooperation. The model further suggests that this tendency should be especially apparent when observers have high epistemic motivation, and that it might

be reversed when they have low epistemic motivation. Initial evidence for this idea was provided by the negotiation study by [Van Kleef and colleagues \(2004a\)](#) described above. Participants who learned that their opponent felt angry (rather than happy or neutral) estimated the opponent's limit to be ambitious, and in order to avoid a costly impasse they made relatively large concessions.

This finding has been replicated and qualified in a number of studies. Using a face-to-face as well as a scenario negotiation paradigm, [Sinaceur and Tiedens \(2006\)](#) showed that participants conceded more to angry as opposed to nonemotional counterparts because the former were perceived to be tougher than the latter. As in the case of happiness, these effects are mitigated when negotiators are low in epistemic motivation and fail to scrutinize the implications of their counterpart's emotions. Thus, when negotiators have a high need for cognitive closure, when time pressure is high ([Van Kleef et al., 2004b](#)) or when they have high power ([Sinaceur & Tiedens, 2006](#); [Van Kleef et al., 2006b](#)) the effects of anger are absent (see [Fig. 2.5](#) for the time pressure case).

Research in the related field of dispute resolution has yielded compatible findings. [Friedman and colleagues \(2004\)](#) used data from e-Bay dispute resolution incidents to demonstrate that a counterpart's expressions of anger may elicit concessions, but only when targets have a vulnerable position (i.e., an unfavorable reputation) and concomitant heightened epistemic motivation. When targets had a strong position (a good reputation), and therefore presumably low epistemic motivation, the counterpart's anger expressions backfired, reducing the likelihood of settlement. In similar vein, data from face-to-face dispute resolution simulations indicate that disputants who adopt a negative, demanding emotional style in negotiations with a relatively powerful opponent who has a salient alternative option are less likely to reach an agreement or to secure a future relationship with the opponent than are those who display positive or neutral affect ([Kopelman et al., 2006](#)). These studies also indicate that the emotional expressions of higher power counterparts have more sway, and that social decision makers become more likely to use their counterpart's emotions as strategic information to the extent that they themselves have relatively low power and therefore high epistemic motivation (see also [Keltner et al., 2008](#)).

The role of strategic inferences also emerged from a series of studies that did not (directly) manipulate epistemic motivation. First, [Steinel et al. \(2008\)](#) differentiated between emotions that are directed toward a negotiator's *offer* (relatively informative) and emotions that are directed toward the negotiator *as a person* (relatively uninformative). When emotional statements were directed at the participant's offer (e.g., "Your offer makes me angry"), participants used the opponent's emotion to assess his or her limits, and conceded more to an angry opponent than to a happy one. However, when the emotions were directed at the negotiator as a person (e.g., "You

make me angry”), negotiators conceded *less* to an angry opponent than to a happy one. In this case, participants did not find useful information in their opponent’s emotions and felt personally attacked. As a result, they reacted more competitively to angry counterparts than to happy ones. It seems that expressions of anger in negotiation are effective to the extent that they are perceived as appropriate by the target and therefore processed in greater depth; and that they backfire when they are deemed inappropriate and the target has a strong negotiation position with concomitant low epistemic motivation (Van Kleef & Côté, 2007).

Second, Van Dijk et al. (2008) showed that bargainers who received angry communications from their partner inferred that the partner had high limits, which led them to make more generous ultimatum offers compared to those who received happy communications. However, subsequent experiments revealed that these effects are mitigated when the consequences of offer rejection are reduced. Bargainers who received angry communications were more likely to deceive their counterpart when given the opportunity, giving them false information about the relative value of the payoffs in the game in order to get a better deal for themselves. Furthermore, when participants were given a more powerful bargaining position, they made less generous ultimatum offers to angry as opposed to happy counterparts. This negative effect of anger communication was mediated by the participant’s own anger. Thus, in keeping with the dual-pathway logic of the EASI model, cooperative responses to expressions of anger were mediated by strategic inferences (i.e., estimates of the other’s limits) when consequences of offer rejection were high (and epistemic motivation was therefore also high), whereas competitive responses to expressions of anger were mediated by affective reactions (i.e., own feelings of anger) when consequences of rejection (and therefore epistemic motivation) were low.

Whereas the studies reviewed above all focused on (non)cooperation as a function of other’s anger, some of them suggest that the other’s anger expressions also motivate “moving away” tendencies. Specifically, when asked afterward whether they would like to meet their partner again and work together on fresh tasks, those who had been paired with an angry partner expressed less desire for future interaction than did those in a nonemotional control condition (e.g., Kopelman et al., 2006; Van Kleef et al., 2004b). This tendency to distance oneself from an angry counterpart was also found in recent work on coalition formation, in which three parties had to determine how to distribute a reward, and who should be included in (or excluded from) the coalition that would benefit from the reward. Van Beest et al. (2008) investigated the interpersonal effects of anger expressions in such a situation, using a computer-mediated three-person coalition formation simulation. They found that when participants had to form a coalition involving an angry party, they made larger concessions to the angry party than to the nonemotional other party. However, when

participants were free to exclude parties from the coalition, they were more likely to exclude angry parties than nonemotional parties, thereby denying those parties their share of the joint payoff. These effects could be explained in terms of the negative feelings participants developed about angry parties. These findings lend additional support to our proposition that the effect of anger expression is moderated by epistemic motivation: When participants depended on an angry partner to cut a deal and epistemic motivation was therefore presumably high, they inferred from the partner's anger that large concessions were required to reach agreement. However, when they were not so dependent on the partner (and epistemic motivation was therefore likely to be low), affective reactions (in this case, negative feelings about the partner) led them to be more likely to exclude angry partners than nonemotional partners from the coalition.

Overall, there is reasonably strong evidence for our proposition that when facing a partner expressing anger in a competitive context, perceivers tend to move toward their partner and increase their cooperative effort. This tendency is mediated by inferential processes and strategic analyses; to the extent that other's anger appears grounded in blocked goals and undesirably slow progress, perceivers increase their cooperation so as to not endanger an otherwise attractive deal with their angry counterpart. Furthermore, indirect evidence suggests that when there is an opportunity to move away from angry counterparts, for example, by avoiding them in the future or by excluding them from a (temporary) coalition, people tend to do so. We suspect, however, that the trade-off between moving toward versus moving away largely depends on strategic considerations (e.g., a cost-benefit analysis of the different behavioral options).

6.3. Signs of supplication (e.g., sadness, distress, disappointment) are ignored

Our model suggests that, in competitive settings, sadness and related supplication emotions have a lesser effect than they do in cooperative settings, most likely resulting in a relatively passive and reactive stance, rather than a proactive one. Preliminary evidence supports this hypothesis. In the negotiation study by [Van Kleef et al. \(2006a\)](#) described earlier, participants were led to believe that their counterpart had a cooperative or competitive personality. When the other was described as cooperative, participants conceded in the face of the other's disappointment. When the other was portrayed as competitive, however, such effects were not observed (see [Fig. 2.4](#)). Similarly, participants who trusted their opponent (which is more common in cooperative exchanges) exhibited greater cooperation in response to expressed disappointment compared to no emotion, but those who distrusted their opponent (symptomatic of competitive interactions) showed no such effect. Finally, the previously mentioned study by [Clark](#)

et al. (1987) demonstrated that expressions of sadness had stronger effects on helping behavior among individuals who desired a cooperative relationship than among those who wanted a more businesslike exchange.

A recent study provides some preliminary evidence that in competitive encounters individuals may take their counterpart's disappointment into account when they have high epistemic motivation (Van Kleef & Van Lange, 2008). In this study, participants with a more calculating, strategic personality were found to be sensitive to their counterpart's signs of supplication. These individuals were more motivated to consider the other's emotions because they feared that not considering them might have consequences detrimental to their own outcomes, and they therefore conceded more to a disappointed counterpart than to a nonemotional one.

In sum, a number of studies show that in competitive encounters individuals are unresponsive to their counterpart's signs of supplication, unless they believe their counterpart to be cooperative and trustworthy (which essentially transforms the situation to a more cooperative one) or they have high epistemic motivation.

6.4. Signs of appeasement (e.g., guilt, regret, embarrassment) invite competition

A final hypothesis that can be derived from Table 2.1 is that, in competitive settings, guilt and related appeasement emotions trigger a tendency to "move against" the expresser, which should result in increased competition. Van Kleef and colleagues (2006a) examined the effects of an opponent's expressions of guilt, interpersonal regret, or no emotion on participants' average demands in a negotiation. Figure 2.6 shows that participants whose opponents expressed emotions of appeasement (guilt or interpersonal regret) adopted a more competitive stance in the negotiation than did those whose opponents expressed no emotion. Additional experiments revealed that participants interpreted the other's expressions of guilt as a sign that the other felt s/he had claimed too much, which led participants to raise their demands because they expected the other to make concessions. In competitive interactions people may therefore use their counterpart's signs of appeasement as strategic information to inform their behavior.

6.5. Emerging patterns in competitive settings

Our review of the interpersonal effects of emotions in the competitive domain allows four conclusions to be drawn regarding the effects of the discrete classes of emotions that have been studied. First, expressions of happiness typically elicit competitive responses from observers because they signal easy-goingness. Second, expressions of anger tend to elicit cooperation because they signal toughness, except when observers have low

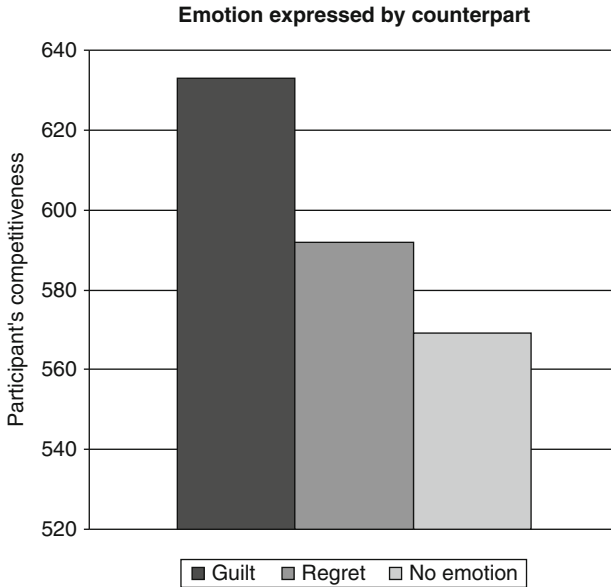


Figure 2.6 Competitiveness in a negotiation as a function of counterpart's expression of guilt, regret, or no emotion (based on data reported in [Van Kleef et al., 2006a](#); Exp. 1).

epistemic motivation. Third, supplication emotions such as sadness and disappointment tend to have little effect, unless parties have high epistemic motivation. Fourth, another's signs of appeasement tend to trigger competition and exploitation because they suggest that the other is prepared to make concessions. These observations lend support to the propositions summarized in [Table 2.1](#).

In addition to these specific conclusions, two broader patterns are worth noting. First, unlike in cooperative settings, the interpersonal effects of emotions in competitive settings are driven primarily by strategic inferences rather than affective reactions. Almost all the studies discussed above provide support for a mediating role of strategic inferences and/or a moderating role of epistemic motivation (e.g., [Sinaceur & Tiedens, 2006](#); [Steinel et al., 2008](#); [Van Dijk et al., 2008](#); [Van Kleef & Van Lange, 2008](#); [Van Kleef et al., 2004a,b, 2006a](#)). People become more competitive when their counterpart shows signs of happiness because they infer that the other is undemanding and ready to concede more. People become more cooperative when faced with expressions of anger because they infer that the other has ambitious goals and is a tough player. People exploit their counterpart when s/he shows guilt or regret, because such appeasement emotions are taken as a sign that the other feels s/he has already claimed too much and is willing to make concessions.

The second broad conclusion is that, just as in the cooperative domain, the interpersonal effects of emotions in competitive settings cannot be understood simply in terms of their valence. Displays of happiness and guilt both trigger competition, despite differing in valence. Furthermore, even though anger and guilt share negative valence, the former often elicits cooperation whereas the latter tends to evoke competition. These effects are better understood in terms of the distinct social signals that these emotions convey and the strategic inferences decision makers draw from these signals than in terms of the positive or negative hedonic quality of these emotions.

As with research on cooperative settings, studies examining behavioral responses to other's emotions in competitive settings have rarely addressed "moving away" tendencies. One exception is work on anger, which suggests that expressing anger may provoke partners to increase cooperation in the short run (so as to not endanger deal-making) but to move away from future interactions in the long run, or to exclude those angry counterparts from beneficial coalition formation. We return to this issue later, when we discuss avenues for future research



7. THEORETICAL IMPLICATIONS

The EASI model and the related empirical evidence shed new light on the role of emotion in social decision making and in social life more generally. Below we discuss several implications of the model for theorizing about the social functions of emotions, the role of the social context, the evolution of emotion, and the study of discrete emotions.

7.1. The importance of putting emotion into context

As is clear from the preceding review, the types of social decisions studied in cooperative and competitive settings differ substantially, with helping and support, group decision making, and leadership and cooperative team performance exemplifying predominantly cooperative settings, and negotiation, ultimatum bargaining, and coalition formation exemplifying predominantly competitive settings. Despite the different contexts and dependent variables, meaningful comparisons can be made between the interpersonal effects of emotions in cooperative and competitive settings, with respect to both their consequences for social decisions and the underlying processes involved. The most general conclusion that emerges from these comparisons—and one that is in line with a central tenet of the EASI model—concerns the relative prominence of affective reactions in cooperative settings and strategic inferences in competitive settings.

In cooperative settings, people tend to catch one another's emotions (e.g., [Anderson et al., 2003](#); [Bartel & Saavedra, 2000](#); [Van Kleef et al., 2008](#)), and the resulting emotional convergence tends to influence social decision making via affect infusion or mood management (e.g., positive emotions promote cooperation; [Barsade, 2002](#)). There is less evidence for emotional contagion in competitive situations, and *if* emotional contagion occurs in such settings it does not necessarily translate into social decisions (e.g., [Friedman et al., 2004](#); [Van Kleef et al., 2004a](#)). This only seems to happen when epistemic motivation is undermined and strategic considerations are eliminated from the situation (e.g., [Van Dijk et al., 2008](#)). In competitive settings, reactions to others' emotional expressions are more strongly mediated by inferential processes. Targets of anger expressions infer that the other is tough and ambitious, which promotes cooperation (e.g., [Sinaceur & Tiedens, 2006](#); [Van Kleef et al., 2004a,b](#)). Targets of expressed guilt and regret infer that the other thinks that s/he has already received too much, which reduces cooperation ([Van Kleef et al., 2006a](#)). Targets of happiness infer that the other is undemanding, which also reduces cooperation ([Van Kleef et al., 2004a,b](#)). These patterns occur regardless of the fact that angry counterparts evoke reciprocal anger in observers and are more disliked than happy or guilty ones, providing compelling evidence for the prominence of strategic inferences relative to affective reactions in predicting social behavior in competitive settings.

Apart from this general pattern, several more specific conclusions can be drawn about the interpersonal effects of discrete emotions in cooperative versus competitive settings. First, people tend to respond supportively and cooperatively to expressions of happiness in cooperative settings (e.g., [Barsade, 2002](#); [Clark et al., 1996](#)), whereas they respond exploitatively to similar expressions in competitive settings (e.g., [Van Kleef et al., 2004a,b](#)). The beneficial effects of expressions of positive emotion in cooperative settings can be explained in terms of emotional contagion ([Barsade, 2002](#)) and increased levels of interpersonal liking and sympathy ([Clark et al., 1996](#)). Although positive emotions have similarly beneficial effects on liking in competitive settings ([Kopelman et al., 2006](#); [Van Kleef et al., 2004a,b](#)), this interpersonal liking does not generally influence behavior. Instead, individuals read the other's positive emotion as a sign of weakness, leading them to adopt a competitive stance.

Second, individuals respond differently to another's expressions of anger as a function of the nature of the situation. Anger typically undermines cooperation in cooperative settings (e.g., [Barsade, 2002](#); [Clark et al., 1996](#); [Sy et al., 2005](#)), but promotes cooperation in competitive settings (e.g., [Sinaceur & Tiedens, 2006](#); [Van Kleef et al., 2004a,b](#)). Regardless of the nature of the situation, anger tends to elicit negative impressions, reciprocal feelings of anger, and a reduced desire to work together (e.g., [Friedman et al., 2004](#); [Kopelman et al., 2006](#); [Van Beest et al., 2008](#); [Van Kleef et al.,](#)

2004a,b). However, in competitive settings these affective reactions have few consequences for the social decisions people make, unless epistemic motivation is undermined (Van Dijk et al., 2008). Instead, decisions are fueled by the strategic inferences people draw regarding the other's toughness, which tend to overrule tendencies to react negatively to a counterpart's anger. Thus, even though individuals may experience a desire to retaliate to their counterpart's anger, they often choose not to do so in order to secure an agreement (Van Kleef & Côté, 2007).

Third, people respond differently to others' signs of supplication in cooperative versus competitive situations. In cooperative encounters, people tend to respond supportively to others' expressions of sadness and distress (e.g., Clark et al., 1996; Van Kleef et al., 2008), whereas in competitive situations they tend to ignore such expressions (e.g., Van Kleef et al., 2006a). These differences can be explained in terms of the greater prominence of emotional contagion in cooperative settings (e.g., Totterdell, 2000), where individuals who come to feel their partner's distress become motivated to relieve the negative feeling by helping the other (cf. Cialdini et al., 1973; Schaller & Cialdini, 1988).

Finally, the cooperative or competitive nature of the situation shapes behavioral reactions to a partner's signs of appeasement. In both cooperative and competitive situations, signs of guilt, regret, and embarrassment contribute to the quality of the interpersonal relationship (e.g., Baumeister et al., 1994; Keltner & Buswell, 1997; Van Kleef et al., 2006a). However, in competitive settings they have the additional effect of eliciting exploitative behavior from others (Van Kleef et al., 2006a)—an effect that is not observed in cooperative settings. Thus, although the interpersonal sensitivity that is conveyed by signs of guilt is also appreciated in competitive settings, strategic considerations in such settings typically lead individuals to exploit a guilty counterpart.

In sum, a key conclusion is that the structure of the social situation serves as a fundamental moderator of the interpersonal effects of emotions. Future research could therefore profit from systematically considering the context in which social decision making occurs, for instance by making direct comparisons between cooperative and competitive situations within a single study.

7.2. Why do we have emotions? Insights from the interpersonal approach

A fundamental question in emotion theory is why emotions have evolved. Although this question is not one that is easily addressed through empirical research, most attempts to answer it have tended to attribute the existence of emotions to their intrapersonal functions, including the provision of information to the individual about features of the environment that are relevant to important concerns, altering cognition so as to function adaptively under the

conditions at hand, and preparing the body for action (for reviews, see [Oatley & Jenkins, 1992](#); [Parrott, 2001](#)). A classic example is the fear experienced by someone who encounters a dangerous snake and runs away, thereby increasing his or her chances of reproducing and contributing to the gene pool.

It is not our purpose here to dispute this intrapersonal functionality (although we note in passing that a recent review has cast doubt on the assumption that emotion has direct effects on behavior; see [Baumeister et al., 2007](#)). Rather, our review suggests that we need to take seriously the possibility that the evolution of emotions has been shaped by their interpersonal functions (cf. [Darwin, 1872](#)). It seems reasonable to suggest that children who more effectively convey distress to their caregivers are more likely to be nurtured, and that parents who are better attuned to their children's suffering are more likely to intervene when needed, thereby increasing the chances of their offspring's survival. Similarly, individuals who display anger at appropriate times and in the appropriate manner are more likely to scare off dangerous enemies, just as attackers who are better attuned to signs of anger from their enemies are more likely to avoid deadly combat (see also [Fridlund, 1992](#)). Finally, people who express happiness in the right circumstances probably develop better social networks, receive more social support in times of suffering, and lead more successful social lives (see e.g., [Lopes et al., 2005](#)). In sum, appropriate uses of and responses to emotional expressions are features of adaptive social behavior that are likely to increase the likelihood of survival and reproduction.

7.3. Not all emotions are created equal: The promise of studying discrete emotions

It is still common in the social decision-making literature that emotions are conceptualized in terms of their positive or negative valence. Our findings challenge this practice. We showed that in competitive settings, expressions of anger typically elicit cooperation but expressions of guilt and regret elicit competition, whereas the reverse pattern emerges in cooperative situations. Thus, it appears that the effects of appeasement emotions such as guilt, embarrassment, shame, and regret are opposite to the effects of dominance-related emotions such as anger, even though all are negatively valenced. Together with a growing body of research outside of social decision making documenting distinct effects of discrete negative emotions (e.g., [Bodenhausen et al., 1994](#); [DeSteno et al., 2000](#); [Fischer & Roseman, 2007](#); [Keltner et al., 1993](#); [Lerner & Keltner, 2000, 2001](#); [Tiedens & Linton, 2001](#)) the present review suggests that there is more promise in conceptualizing emotions in terms of their unique appraisal patterns and action tendencies than in terms of their valence. For instance, the “core relational themes” of anger and guilt are other blame and self-blame, respectively ([Smith et al., 1993](#)), which helps to explain why they have

opposite effects. Accordingly, future research would do well to measure or manipulate discrete emotions, rather than diffuse mood states. The predictive validity of affect can be expected to increase as a function of the level of specificity, because more specific emotions carry more clear-cut behavioral implications (Weiner, 1986).

When it comes to discrete emotions, our review also highlights important gaps in our knowledge. Although we are beginning to understand the effects of happiness, anger, sadness, distress, disappointment, guilt, and regret, the effects of many other emotions have yet to be explored. A focus on other discrete emotions is needed to gain a more complete understanding of the role of emotion in social decision making. One question that new research could address is whether different positive emotions (e.g., happiness, pride, gratitude, relief, hope, compassion) have differential effects on social decisions, as is the case for negative emotions. For example, it seems plausible that in cooperative situations positive emotions with an “other” focus (e.g., gratitude, compassion) would be more likely to facilitate cooperation than positive emotions with a “self” focus (e.g., pride).



8. AVENUES FOR FUTURE RESEARCH

Before closing we want to highlight four areas that, we believe, offer especially promising avenues for future research: the role of emotional intelligence, the relationship of the emotion with the situation at hand, the issue of mixed emotions, and the neglected option of “leaving the field.”

8.1. Emotional intelligence: Recognition and regulation

Some of the conclusions that stem from our review resonate with theorizing in the area of emotional intelligence. Two of the central skills that are featured in the four-branch ability model of emotional intelligence relate to the accurate recognition and adequate regulation of one’s own and others’ emotions (Mayer et al., 2004). Clearly, many of the interpersonal effects reviewed here rest on the assumption that individuals perceive their partner’s emotional state. However, people vary in their ability to accurately recognize emotions in others (Salovey & Mayer, 1990). There is some evidence that successful decoding of emotion is an important factor in negotiating interpersonal relationships (Elfenbein et al., 2007). In a similar vein, it has been suggested that emotional expressivity, which arguably enhances the recognizability of one’s emotions by others, facilitates trust and cooperation (Boone & Buck, 2003). These notions point to the importance of studying the social consequences of emotion recognition.

Our review also points to the importance of emotion *regulation*. For instance, the finding that expressions of positive emotion elicit helping and

social support in cooperative settings but exploitation in competitive settings points to some clear advantages of adaptive emotion regulation (cf. Côté, 2005; Elfenbein, 2007). Individuals who successfully navigate social decision-making situations are likely to be those who know when and how to show particular emotions. Importantly, successful emotion regulation requires not just showing the right emotion at the right time, but also showing the right emotion in the right way. Research by Krumhuber and colleagues (2007, 2009) shows that, in cooperative situations, authentic displays of happiness are more likely than inauthentic displays to elicit cooperation from others. Along similar lines, Côté et al. (2010) found that, in a competitive negotiation situation, “deep acted” displays of anger made a target more conciliatory, whereas “surface acted” anger displays had the reverse effect. This difference could be explained in terms of lower levels of authenticity and trust in the latter condition. Future research is needed to develop a fuller understanding of the role of emotion regulation in social decision making.

8.2. Why are you angry? Integral versus incidental emotions

The question of whether emotions arise during social decision making (“integral emotions”) or are spillovers from other situations (“incidental emotions”; cf. Lerner et al., 2004) seems highly relevant, yet is largely unexplored. This is unfortunate, because knowing where emotions come from should allow for better predictions regarding their effects. Schwarz and Clore’s (1983) affect-as-information model describes how, at the intrapersonal level, a person’s judgments may be influenced by a positive or negative mood evoked by an unrelated and irrelevant event. According to this perspective, stronger affective influences occur when ambiguity regarding the source of one’s mood leads one to *misattribute* the mood to the target of judgment, such as when a cheerful mood arising from beautiful weather is used to guide responses to questions about one’s life satisfaction. By analogy, stronger intrapersonal affective influences in social decision making might be expected in the case of incidental as opposed to integral affect. At the interpersonal level, however, we propose that stronger effects are likely when the other’s emotion is perceived as arising from the social interaction itself, because in this case the emotion carries more diagnostic information that observers can use to inform their behavior. Future work could compare the effects of incidental and integral emotions in social decision making.

8.3. Mixed emotions: Blends and contrasts

Without exception, the studies reviewed here have examined the effects of one-dimensional affective states (e.g., relatively “pure” happiness, anger, sadness, or guilt). However, in everyday life individuals often experience “blends” of emotions (Scherer & Tannenbaum, 1986). These blends may

even comprise emotions with a different valence. For instance, individuals reported that they simultaneously experienced happiness and sadness on graduation day (Larsen et al., 2001) and after a “disappointing win” or a “relieving loss,” where one wins less well or loses less badly than expected (Larsen et al., 2004). To date, very little is known about how these mixed emotions influence social decision making. Evidence suggests that the simultaneous experience of positive and negative emotions enhances individual creativity (Fong, 2006), suggesting that emotion blends might affect social decision making at the intrapersonal level of analysis. In addition, the alternating or simultaneous expression of positive and negative emotions can be an effective instrument of social influence (Rafaeli & Sutton, 1991; Sinaceur et al., 2009), suggesting that patterns of mixed emotions may also affect social decision making at the interpersonal level. Future research is needed to shed more light on the mechanics of such configurations of emotion.

8.4. Moving away: When do emotional expressions lead a target to “leave the field?”

We framed targets’ repertoire of behavioral responses to another’s expressed emotions in terms of Horney’s (1945) distinction between “moving towards,” “moving away,” and “moving against” tendencies. To date, research on the interpersonal effects of emotions in social decision making has focused almost exclusively on the tendencies to move toward (cooperate with) or move against (compete with) the expresser. As a result, little is known about when targets of emotional expressions decide to avoid or end interaction with the expresser (moving away).

Ignoring moving away tendencies has two critical implications. First, in many situations—both cooperative and competitive ones—individuals do have the option of leaving the field, of ending the interaction, or of dissolving the interdependent relationship. Intimate partners may divorce, friends may decide to avoid each other, employees may find a job elsewhere, negotiators may seek a better deal with someone else, and in social conflict disputants may avoid constructive problem solving and hope that the problem (or their counterpart) will “just go away.” By overlooking such behavioral options we inadvertently limit our analysis, and the conclusions we draw about the interpersonal effects of emotions may not be as generalizable as we would like them to be.

Furthermore, in a variety of settings, moving away can be a strategically smart way to maximize personal outcomes. In cases where the perceiver wants to maintain and defend the status quo yet is faced with a partner who seeks to change it, it is probably strategically wise to move away from the partner and avoid interaction: Defenders are likely to be better off if they stall, delay, and avoid their partner, than if they move toward or against their

partner. This applies to judicial cases where a defendant seeks a “not guilty” verdict, to organizational change programs where employees prefer no change whatsoever, to social conflicts where one or more parties benefit more from the ongoing conflict than from its resolution, and so on. In these “asymmetrical” cases, the tendency to move away readily takes precedence over moving toward or moving against tendencies. New research is needed to uncover how “defenders” and “challengers” respond to their counterpart’s emotional expressions under these conditions.

The second implication of ignoring moving away responses is that researchers may force their participants into certain behavioral tendencies. When the natural tendency to move away cannot be realized simply because that option is not made available, we may erroneously conclude that people tend to cooperate. Recall the research showing that, in competitive settings, another’s anger provokes concession making and conciliatory behavior. Because this work did not allow participants to move away, a safer conclusion might be that the other’s anger mitigates moving against behavior (competition) rather than promoting moving toward behavior (cooperation). Put differently, when designing new studies, incorporating options to “move away” should considerably enhance our understanding of the social functions of emotions in social decision making.



9. CONCLUSION

Emotions play an important role in shaping the social decisions people make in everyday life. Motivated by three key concerns with past research—its focus on intrapersonal rather than interpersonal effects, its focus on positive and negative mood rather than discrete emotions, and its neglect of the social context within which social decisions are made—we advanced the EASI model. The model is grounded in two fundamental assumptions, namely (a) that individuals use interdependent others’ emotional expressions to make sense of ambiguous and uncertain social situations, and (b) that the cooperative or competitive nature of the social situation fundamentally influences the interpersonal effects of emotions.

Building on these assumptions and previous theorizing about the social functions of emotions, we proposed that emotions can exert interpersonal influence via affective reactions (including emotional contagion, affect infusion, and mood management) and/or inferential processes (most notably the strategic inferences individuals draw from their counterpart’s emotional expressions). We developed the argument that affective reactions take precedence when the social situation is (perceived as) cooperative and/or decision makers have low epistemic motivation (i.e., low motivation to develop and maintain an accurate understanding of the situation), whereas

inferential processes take precedence when the situation is (perceived as) competitive and/or decision makers have high epistemic motivation.

Guided by this model, we reviewed evidence showing that the interpersonal effects of emotions and the processes that drive them differ as a function of the nature of the situation, with effects in cooperative settings being best explained in terms of emotional contagion, affect infusion, and mood management, and effects in competitive contexts being better understood in terms of the strategic inferences individuals draw from their counterpart's emotional expressions. We have seen that these interpersonal effects cannot be explained in terms of the positive versus negative valence of emotions, and should instead be understood in terms of the unique social information conveyed by each discrete emotion. We hope that the EASI model will stimulate new research that acknowledges the dynamic and social nature of emotional phenomena. Such work is needed to develop a more complete understanding of the pervasive influence of emotion on our social lives.

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ON PASSION FOR LIFE ACTIVITIES: THE DUALISTIC MODEL OF PASSION*

Robert J. Vallerand

Contents

1. On Passion for Life Activities: The Dualistic Model of Passion	99
2. On the Psychology of Passion	100
2.1. Definitional elements of passion	100
2.2. On the duality of passion	100
2.3. The DMP	101
2.4. Passion and related constructs	104
3. Initial Research on the Concept of Passion	106
4. On the Development of Passion	109
4.1. On the initial development of passion	109
4.2. On the on-going development of passion	114
5. Passion and Intrapersonal Outcomes	119
5.1. Passion and cognitive processes	119
5.2. Passion and affect	122
5.3. Passion and psychological well-being	126
5.4. Passion and addictive behaviors	133
5.5. Passion and physical health	135
5.6. Passion and performance	139
6. Passion and Interpersonal, Intergroup, and Societal Outcomes	143
6.1. Passion and quality of interpersonal relationships	143
6.2. Passion and intergroup outcomes	150
6.3. Passion for a cause: Seeking societal changes	152
7. Integrative Research	155
7.1. Social determinants, passion, and outcomes	155
7.2. Personal determinants, passion, and outcomes	157

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8. Passionate Functioning Under Different Situations	162
8.1. Subjective well-being following irremediable success and failure	162
8.2. When failing can be prevented by attacking the threat source	169
8.3. Performance following the reception of positive or negative self-relevant information	172
9. Future Research Issues	177
9.1. More on the development of passion	177
9.2. Is harmonious passion all that good and obsessive passion all that bad?	181
9.3. Are nonpassionate individuals doomed?	182
9.4. On letting go: When the time has come to end engagement in the passionate activity	183
10. Summary and Conclusion	183
Acknowledgments	184
References	185

Abstract

The purpose of this chapter is to review research that focuses on a new conceptualization on passion for activities, the Dualistic Model of Passion (DMP) [Vallerand, R. J., Blanchard, C. M., Mageau, G. A., Koestner, R., Ratelle, C. F., Léonard, M., et al. (2003). Les passions de l'âme: On obsessive and harmonious passion. *Journal of Personality and Social Psychology*, 85, 756–767.]. Passion is defined as a strong inclination toward a self-defining activity that people love, find important, and in which they invest time and energy. This model further posits the existence of two types of passion (harmonious and obsessive) each associated with different determinants, outcomes, and psychological processes. Harmonious passion originates from an autonomous internalization of the activity in identity, leading people to choose to engage in the activity that they love. It is expected to mainly lead to adaptive outcomes. Conversely, obsessive passion is derived from a controlled internalization and is experienced as an uncontrollable desire to engage in the activity that one loves. Obsessive passion is hypothesized to typically predict less adaptive outcomes. Results of several studies conducted with participants of all ages engaged in a diverse range of activities provide support for the model. These findings reveal that passion matters not only with respect to intrapersonal outcomes (e.g., cognition, affect, psychological well-being, physical health, and performance), but also for interpersonal, intergroup, and societal consequences. The determinants of passion as well as the importance of taking into account the nature of the situation to better predict the consequences of the two types of passion are also addressed. Overall, the research reviewed clearly supports the DMP and attests to the significant role of passion in people's lives.



1. ON PASSION FOR LIFE ACTIVITIES: THE DUALISTIC MODEL OF PASSION

“Passion makes idiots of the cleverest men, and makes the biggest idiots clever”

(François de La Rochefoucauld, 1613–1680)

For centuries, scholars and laypeople alike have written and talked about passion extensively. While doing so, they have used the term “passion” to explain human exploits as well as foibles. In fact, rarely has a given construct been used so often to explain diametrically opposed outcomes. As expressed in the quote above, it is often assumed that passion can bring out the best and the worst in people. However, there is no way of telling if such assumptions are supported as they have yet to be subjected to scientific scrutiny. Given the prevalence of the use of the passion construct in everyday life, it is ironic that so little information exists on its role in outcomes and on the psychological processes through which such outcomes take place. Indeed, although philosophers have spent a considerable amount of effort to reflect on the nature of passion, very little work has been done in psychology on this construct until recently.

The purpose of this chapter is to conduct a review of research on a recent model of passion, namely the Dualistic Model of Passion (DMP; [Vallerand, 2008](#); [Vallerand et al., 2003](#)). Because passion is so intrinsically tied with people’s lives, research has been conducted in a number of real-life contexts, including work, sports, education, relationships, and others looking at a variety of activities, settings, participants, and outcomes. Furthermore, several researchers from other research laboratories have recently started to study passion in other areas such as gaming (e.g., [Wang & Chu, 2007](#)), online shopping addiction (e.g., [Wang & Yang, 2007](#)), leisure ([Stenseng, 2008](#)), the Internet ([Tosun & Lajunen, 2009](#)), and gambling (e.g., [MacKillop et al., 2006](#)). Although such research is reviewed, the focus of this chapter is nevertheless on our own research. Following a theoretical discussion on the concept of passion and a presentation of the DMP, research on passion is reviewed in six major sections. In the first section, I review the results of initial research (i.e., [Vallerand et al., 2003](#), Study 1) as pertains to the validation of the concept of passion. Next, I address research on the development of passion. In the following sections, the role of passion is addressed as pertains to intrapersonal consequences (cognition, affect, psychological well-being, physical health, and performance), as well as interpersonal, intergroup, and societal outcomes. Then, integrative research that incorporates the determinants and consequences of passion is reviewed.

Finally, research on the role of the situation as a moderator of the effects of passion on outcomes is reviewed. It will be seen that passion permeates the fabric of everyday life and does make a difference in people's lives. I conclude with suggestions for future research.



2. ON THE PSYCHOLOGY OF PASSION

2.1. Definitional elements of passion

The concept of passion has had many definitions over the years (see the Dictionary of [American Psychological Association, 2006](#), p. 675). One definition refers to a strong liking for an activity, object or, concept. It is this definition that is the focus of the present chapter. This definition of passion helps circumscribe what passions are and what being passionate means. To begin with, a passion is typically oriented toward an object or activity. Someone is passionate about an activity (e.g., basketball), an object (e.g., one's card collection), or even a person (e.g., being attracted to the loved one). Furthermore, it appears that being passionate entails being emotionally charged, or at least affectively inclined toward the object or activity. That is, passion and emotion are related. Such affect toward the object of one's passion implies that the person values the object; if not, no affect or liking would be experienced. However, although related, emotions and passions are not equivalent. As Kant (1724–1804) has proposed, emotions are typically fleeting in nature, lasting only a moment, whereas passions are more enduring in nature as they refer to something more permanent that has come to characterize that person in relation to a specific object or activity. Finally, because there is an intimate person–object link that is rooted in identity, passions should lead people to pursue the object or activity with energy on a long-term basis. Thus, when people are passionate for something, they typically engage regularly in the activity and may do so for several years and sometimes a lifetime.

The above discussion underscores that passion implies a special relation to an object or activity that one loves, values, and that has some ties to one's identity, leading to an important involvement in it. These are the important elements that should be part of a definition of passion. I return to this issue in the discussion of the DMP.

2.2. On the duality of passion

When we started our initial research in the late 1990s, very little research existed on passion from a psychological standpoint. Although passion had generated a lot of attention from philosophers (see [Rony, 1990](#), for a review), it received little empirical attention in psychology. In fact, until

recently, the only empirical work in psychology had focused on is romantic passion (Hatfield & Walster, 1978). Philosophers have long been interested in the concept of passion (although their focus has been more on the emotional aspect of passion than on its motivational dimension), with two distinct perspectives emerging (Rony, 1990). The first posits that passion entails a loss of reason and control. This perspective originates from the Greek philosophers. For instance, according to Plato (429–347 BC), reason moves people upward toward the divine, whereas passions bring people downward toward animal instincts and the flesh. Because passions move people toward the lesser good, they should be avoided. Later on, Spinoza (1632–1677) proposed that acceptable thoughts originated from reason, whereas unacceptable thoughts derived from passion. People afflicted with passion experienced a kind of suffering, in line with the etymology of the word passion (from the latin “passio” for suffering). According to this perspective, individuals with a passion are seen as passive, as slaves to their passion, because it comes to control them. Thus, according to this first position, passions entail a loss of control over the object.

The second perspective portrays passions in a more positive light. For instance, Aristotle proposed that people should not be ashamed of their passions as they reflect human qualities, or what it is to be human. Nevertheless, for Aristotle, passions need to be controlled by reason in order to be positive, or at least not negative. Similarly, in “The Passions of the Soul” (1649/1972), Descartes (1596–1650) defines passions as strong emotions with inherent behavioral tendencies that can be positive as long as reason underlies the behavior. Rousseau (1712–1778) goes further and even suggests that passion can lead to knowledge and truth. Although Rousseau agrees that passions must at times be controlled, he refutes the usefulness of reason in the process. Rather he posits that a passion can only be controlled by another passion. Hegel (1770–1831) further argues that passions are highly energetic and, in fact, are necessary to reach the highest levels of achievement. Thus, this second view of passion sees people as more active in relation to their passion. It even suggests that adaptive benefits will accrue when individuals are in control of their passion (Paturet, 2001; St-Thomas Aquinas, 1225–1274).

2.3. The DMP

Vallerand and his colleagues (Vallerand, 2008; Vallerand & Houlfort, 2003; Vallerand et al., 2003) have recently developed a model of passion that addresses the dualism inherent in passion discussed above. In line with Self-Determination Theory (Deci & Ryan, 2000), the DMP proposes that people engage in various activities throughout life in hope of satisfying the basic psychological needs of autonomy (a desire to feel a sense of personal initiative), competence (a desire to interact effectively with the

environment), and relatedness (a desire to feel connected to significant others). Although people do not have much choice over engaging or not in some activities such as school and work (indeed most people have to study and work at some point in life), they do over other activities, especially those engaged in during leisure time (e.g., sports, chess, music, etc.). Eventually, after a period of trial and error, most people will start to show preference for some activities, especially those that are enjoyable and allow the satisfaction of the psychological needs of competence, autonomy, and relatedness (Ryan & Deci, 2003). Of these activities, a limited few will be perceived as particularly enjoyable and important, and to have some resonance with how we see ourselves. These activities become passionate activities. In line with the previous discussion on the definition of passion, the DMP defines passion as a strong inclination toward a self-defining activity that one likes (or even loves), finds important (or highly value), and in which one invests time and energy. These activities come to be so self-defining that they represent central features of one's identity. For instance, those who have a passion for playing basketball, playing the guitar, or writing poetry do not merely engage in these activities. They *are* "basketball players," "guitar players," and "poets." Thus, a passion is much more than experiencing "love" for an activity. It also entails valuing the activity to a high degree, devoting ample time to it, and making it one of the central aspects of one's identity and life.

Past research has shown that values and regulations concerning uninteresting activities can be internalized in either a controlled or an autonomous fashion (Deci et al., 1994; Sheldon, 2002; Vallerand, 1997; Vallerand & Ratelle, 2002). Similarly, the DMP posits that activities that people like will also be internalized in the person's identity to the extent that these are highly valued and meaningful for the person. Furthermore, the DMP proposes that there are two types of passion, obsessive and harmonious, that can be distinguished in terms of how the passionate activity has been internalized into one's identity. Obsessive passion results from a controlled internalization of the activity into one's identity. Such an internalization process leads not only the activity representation to be part of the person's identity, but also to values and regulations associated with the activity, to be at best partially internalized and at worst to be internalized completely outside the integrating self (Deci & Ryan, 2000). Such an internalization of one's regulations for the activity produces a phenomenological experience of a relative lack of control over the activity. A controlled internalization originates from intra- and/or interpersonal pressure typically because certain contingencies are attached to the activity such as feelings of social acceptance or self-esteem, or because the sense of excitement derived from activity engagement is uncontrollable. People with an obsessive passion can thus find themselves in the position of experiencing an uncontrollable urge to partake in the activity they view as important and enjoyable. They cannot

help but to engage in the passionate activity. The passion must run its course as it controls the person. Consequently, people risk experiencing conflicts and other negative affective, cognitive, and behavioral consequences during and after activity engagement. For instance, a young university assistant professor with an obsessive passion for playing the guitar might not be able to resist an invitation to jam with his friends the night before submitting an important research grant. During the jam session, he might feel upset with himself for playing music instead of working on the grant. He might, therefore, not fully focus on the task at hand (playing music) and may not experience as much positive affect and flow as he should while playing.

As seen above, obsessive passion leads individuals to display a rigid persistence toward the activity, as oftentimes they cannot help but to engage in the passionate activity (as was the case for our young university professor). This is so because internally controlling, rather than integrative, self processes (Hodgins & Knee, 2002), are at play with obsessive passion leading the person to engage in the activity with a fragile and contingent sense of self-esteem (e.g., Crocker, 2002; Kernis, 2003), and eventually becoming defensive rather than open to new experiences and information. Clearly, such contingencies can lead the individual to become dependent on the passionate activity and to suffer emotionally in the face of failure. Furthermore, although the dependence and rigid persistence that obsessive passion creates may lead to some benefits (e.g., sustained involvement and improved performance at the activity), it may also come at a cost for the individual. Indeed, depending on the situation and the type of task at hand, the lack of flexibility that obsessive passion entails may potentially lead to less than optimal functioning within the confines of the passionate activity, such as less creativity. Furthermore, such a rigid persistence toward the passionate activity may lead the person to experience conflict with other aspects of his or her life when engaging in the activity (when one should be doing something else, like writing a research grant as in the case of our young professor, for instance), as well as to frustration and rumination about the activity when prevented from engaging in it. Thus, if the obsessively passionate musician professor manages to say no to his friends and the jam session, he still may end up suffering because he may have difficulties concentrating on writing the research grant because of ruminations about the lost opportunity to play music.

Conversely, harmonious passion results from an autonomous internalization of the activity into the person's identity. An autonomous internalization occurs when individuals have freely accepted the activity as important for them without any contingencies attached to it. This type of internalization emanates from the intrinsic and integrative tendencies of the self (Deci & Ryan, 2000; Ryan & Deci, 2003) and produces a motivational force to engage in the activity willingly and engenders a sense of volition and personal endorsement about pursuing the activity. When harmonious

passion is at play, individuals do not experience an uncontrollable urge to engage in the passionate activity, but rather freely choose to do so. It is reminiscent of the second, more positive, philosophical perspective on passion described earlier, where the person remains in control of the passionate activity or object. With this type of passion, the activity occupies a significant but not overpowering space in the person's identity and is in harmony with other aspects of the person's life. In other words, with harmonious passion the authentic integrating self (Deci & Ryan, 2000) is at play allowing the person to fully partake in the activity one is passionate about with a secure sense of self-esteem, as well as a flexibility and an openness to experience the world in a nondefensive (Hodgins & Knee, 2002), mindful manner (Brown & Ryan, 2003). Such an engagement in the activity is conducive to positive experiences. Consequently, people with a harmonious passion should be able to fully focus on the task at hand and experience positive outcomes both during task engagement (e.g., situational positive affect, concentration, flow) and after task engagement (general positive affect, life satisfaction, etc.). Thus, there should be little or no conflict between the person's passionate activity and his/her other life activities. Furthermore, when prevented from engaging in their passionate activity, people with a harmonious passion should be able to adapt well to the situation and focus their attention and energy on other life tasks. Finally, with harmonious passion, the person is in control of the activity and can decide when to and when not to engage in the activity. Thus, when confronted with the possibility of playing music (jamming) with his friends or working on the research grant, the professor with a harmonious passion toward music can readily tell his friends that he will take a rain check and proceed to be fully immersed in the preparation of the research grant without thinking about the jam session. People with a harmonious passion are able to decide not to play on a given day if needed or even to eventually disengage from the activity permanently if they determine that it has become a permanent negative factor in their life. Thus, behavioral engagement in the passionate activity can be seen as flexible when harmonious passion is at play.

2.4. Passion and related constructs

The few psychologists who have looked at the concept have underscored its motivational aspect. For instance, Frijda et al. (1991) posited that "Passions are defined as high-priority goals with emotionally important outcomes" (p. 218). According to these authors, individuals will spend large amounts of time and effort in order to reach their passionate goals. Thus, rightfully so, Frijda et al. underscore the motivational side of passion. Other researchers have proposed that passion (or love) for work as an entrepreneur plays a major role in how one's vision is accepted in the organization and the

performance of the company (Baum & Locke, 2004). Nearly all empirical work on passion has been conducted in the area of close relationships under the rubric of passionate love (e.g., Hatfield & Walster, 1978; Sternberg, 1986). Although such research is important, it does not deal with the main topic at hand, namely passion toward activities.

Other psychologists have focused on related concepts such as positive addiction (Glasser, 1976), and dependence (Hausenblas & Downs, 2002) for activities that people enjoy (such as running). For instance, in line with perspectives from philosophers such as Rousseau's (1712–1778) idea that to control a passion one needs to replace it with another, Glasser proposed that positive addiction entails replacing a negative activity (e.g., gambling) by a more positive one (e.g., running). However, it is not clear from Glasser's position how an addiction can truly be positive as it is merely suggested to replace one addiction by another. Further, this position has been largely atheoretical and to the best of my knowledge has led to no empirical research. Finally, other authors (Duckworth et al., 2007) have started to look at how a concept they call "grit" (which is defined as perseverance and passion for long-term goals) can predict performance. Although grit has indeed been found to predict performance, this concept implies that passion always leads to persistence. As will become obvious in this chapter, there are conditions under which passion (and especially harmonious passion) may not lead to persistence.

The concept of passion is also related to other psychological concepts such as flow (Csikszentmihalyi, 1978), talent-related activities (Rathunde, 1996), well-developed interests (Renninger & Hidi, 2002), and commitment (Meyer & Allen, 1997). However, these constructs do not present a nuanced perspective on processes leading to both adaptive and maladaptive outcomes that are inherent in the duality of passion. Thus, concepts such as talent-related activities and well-developed interests, though sharing the elements of interest and value that characterize the construct of passion, do not make the distinction between two types of interest or talent that would reflect different types of engagement and outcomes inherent in the duality of passion. The same applies to flow. The DMP, as was seen previously, makes that distinction, with harmonious passion being expected to generally lead to adaptive, and obsessive passion to less adaptive and, at times maladaptive, outcomes. In addition, even concepts such as that of commitment may not be as related to passion as expected. For instance, although people who are heavily committed to a given activity can be passionate, other committed people may not be, as they may not necessarily like the activity. It would therefore appear that people may be highly committed to exercising not because they love it but because they desperately need to lose weight. Thus, concepts such as flow, well-developed interests, talent-related activities, and commitment are not equivalent to passion.

Perhaps passion is most closely linked to intrinsic motivation. Intrinsic motivation shares some conceptual similarity with passion, as both involve interest and liking toward the activity. However, intrinsically motivated activities are typically not seen as being internalized in the person's identity and are best seen as emerging from the person–task interaction at the short-term level (Koestner & Losier, 2002). Research has indeed empirically shown that although both types of passion are closely linked to identity (as assessed by the Inclusion of the Other in the Self Scale, Aron et al., 1992), intrinsic motivation is less so (Vallerand, 2009). Furthermore, intrinsic motivation does not address the duality of passion where some adaptive and other maladaptive outcomes are experienced. Intrinsic motivation is hypothesized to lead to only adaptive outcomes (Deci & Ryan, 2000). On the other hand, extrinsic motivation does not entail performing the activity out of enjoyment, but for external reasons (i.e., for reasons other than for the activity itself such as external or internal pressure). Therefore, although some forms of extrinsic motivation such as identified and integrated regulation entail some internalization of an activity that one does not like in the self, a fundamental difference between extrinsic motivation and passion is the relative lack of liking (or loving) for the activity that is present with extrinsic motivation. Research empirically supports these distinctions between passion and intrinsic and extrinsic motivation and even shows that controlling for intrinsic and extrinsic motivation does not change the role of harmonious and obsessive passion in the prediction of positive and negative affect (Vallerand et al., 2003, Study 2).

In sum, although the concept of passion does have conceptual similarities with other motivational constructs, it also differs from them in significant ways. Of major importance is the fact that no other concept seems to convey the duality of effects associated with passion, as specified by the DMP.



3. INITIAL RESEARCH ON THE CONCEPT OF PASSION

In the initial study (Vallerand et al., 2003, Study 1) we sought to develop the Passion Scale and to test the validity of the passion definition. To this end, over 500 university students completed the Passion Scale with respect to an activity that they loved, that they valued, and in which they invested time and energy (i.e., the passion definition), as well as other scales allowing us to test predictions derived from the Passion Model. A large variety of passionate activities were reported ranging from physical activity and sports and music to watching movies and reading. Participants also reported engaging in their passionate activity for an average of 8.5 h per week and had been engaging in that activity for almost 6 years (see also Stenseng, 2008 for similar results). Thus, clearly passionate activities are

meaningful to people and do not simply reflect a fleeting interest. Given that these participants were on average around 20 years of age, it would appear that for most individuals in the study, initial engagement in the passionate activity started in their teen years. These findings would tend to support the position of authors who posit that adolescence represents a crucial period of identity construction (Erikson, 1968; Marcia, 1967).

Interestingly, 84% of our participants indicated that they had at least a moderate level of passion for a given activity in their lives (they scored at least 4 out of 7 on a question asking them if their favorite activity was a “passion” for them). Subsequent research with over 750 participants largely taken from the general population with an age ranging from 18 to 90 years showed that 75% reported being highly passionate about a given activity in their life (using a cut-off point of an average of 5 and more on a 7-pt scale on the four passion criteria of love, value, time spent on the activity, and passion for the activity; Philippe et al., 2009b). Overall, it would appear that the prevalence of passion is rather high, at least in the Province of Quebec.

Research from Vallerand et al. (2003, Study 1) as well as from other authors has provided empirical support for several aspects of the passion conceptualization. First, Vallerand et al. (2003, Study 1) randomly split their sample of over 500 participants in two subsamples. After conducting an exploratory factor analysis supporting the presence of two factors corresponding to the two types of passion with the first sample, they confirmed the bifactorial structure with the second sample using confirmatory factor analysis. These findings on the factor validity of the Passion Scale has been replicated in a number of studies (Carboneau et al., 2008; Castelda et al., 2007; Houliort et al., 2009b; Rousseau et al., 2002; Vallerand et al., 2006, Study 1). The Passion Scale consists of 2 subscales of 6 items each.¹ Table 3.1 presents the two subscales, namely the Obsessive (e.g., “I almost have an obsessive feeling toward this activity”) and Harmonious Passion subscales (e.g., “This activity is in harmony with other activities in my life”). In addition, much research has supported the construct validity of the Passion Scale by showing that it leads to findings in line with the DMP in several activities and contexts including education (Vallerand et al., 2007, Study 2), dramatic arts (Vallerand et al., 2007, Study 1), work (Carboneau et al., 2008; Vallerand & Houliort, 2003), Internet use (Séguin-Lévesque et al., 2003), sports (Vallerand et al., 2006), music (Mageau et al., 2009a, Study 3), gambling (Castelda et al., 2007; Rousseau et al., 2002), and literally hundreds of various leisure activities (Stenseng, 2008; Vallerand et al., 2003,

¹ The original Passion Scale (Vallerand et al., 2003) consisted in two 7-item subscales. A slightly revised scale consisting of two 6-item scales is now used. These subscales correlate very highly with their respective original subscale ($r = 0.80$ and above) and yield the same findings with determinants and outcomes. In addition, we have used a 3-item version (Vallerand et al., 2007) and even a 1-item version (Philippe & Vallerand, 2007) of each subscale with much success.

Table 3.1 The passion scale

Describe an activity that you love, that is important for you, and in which you spend a significant amount of time								
My favorite activity is:_____								
<i>While thinking of your favorite activity and using the scale below, please indicate your level of agreement with each item</i>								
Not agree at all 1	Very slightly agree 2	Slightly agree 3	Moderately agree 4	Mostly agree 5	Strongly agree 6	Very strongly agree 7		
1. This activity is in harmony with the other activities in my life				1	2	3	4	5
2. I have difficulties controlling my urge to do my activity				1	2	3	4	5
3. The new things that I discover with this activity allow me to appreciate it even more				1	2	3	4	5
4. I have almost an obsessive feeling for this activity				1	2	3	4	5
5. This activity reflects the qualities I like about myself				1	2	3	4	5
6. This activity allows me to live a variety of experiences				1	2	3	4	5
7. This activity is the only thing that really turns me on				1	2	3	4	5
8. My activity is well integrated in my life				1	2	3	4	5
9. If I could, I would only do my activity				1	2	3	4	5
10. My activity is in harmony with other things that are part of me				1	2	3	4	5
11. This activity is so exciting that I sometimes lose control over it				1	2	3	4	5
12. I have the impression that my activity controls me				1	2	3	4	5
13. I spend a lot of time doing this activity				1	2	3	4	5
14. I love this activity				1	2	3	4	5
15. This activity is important for me				1	2	3	4	5
16. This activity is a passion for me				1	2	3	4	5

Scoring key

Obsessive Passion : # 2, 4, 7, 9, 11, 12

Harmonious Passion : # 1, 3, 5, 6, 8, 10

Passion Criteria : # 13 to 16

Study 1). Furthermore, internal consistency analyses have shown that both subscales are reliable. Finally, test–retest correlations over periods ranging from 4 to 6 weeks revealed moderately high stability values (Ratelle et al., 2009; Rousseau et al., 2002), thereby supporting the hypothesis that although the two subscales are relatively stable (and thus, that there seems to be a predominant form of passion for each individual), there is still room for temporary fluctuations.²

A second series of critical findings pertained to results from partial correlations (controlling for the correlation between the two types of passion) which showed that both harmonious and obsessive passions are positively associated with the passion criteria of activity valuation and loving, time and energy expenditure on the activity, and measures of the activity being perceived as a passion, thereby providing support for the definition of passion (e.g., Harvey & Vallerand, 2009; Vallerand et al., 2003, Study 1). In addition, although both types of passion have been found to relate to one's identity (e.g., Vallerand et al., 2003, Study 1; Vallerand et al., 2008b, Study 1), obsessive passion has been found to more strongly relate to measures of both identity and conflict with other life activities than harmonious passion (e.g., Vallerand et al., 2003, Study 1; Vallerand et al., 2008b, Study 3). Thus, overall, these findings support the view that both harmonious and obsessive passion are indeed a “passion” as each one reflects the definition of the passion construct. Finally, additional research has also shown that obsessive (but not harmonious) passion leads to rigid persistence in ill-advised activities such as cycling over ice and snow in winter (Vallerand et al., 2003, Study 3) and pursuing one's engagement in activities that have become negative for the person such as pathological gambling (Vallerand et al., 2003, Study 4). We will return to this issue in a later section.

In sum, initial research provided support for the concept of harmonious and obsessive passion. We now turn to research that has explored some of the determinants and outcomes associated with the passion construct.

4. ON THE DEVELOPMENT OF PASSION

4.1. On the initial development of passion

The DMP posits that three processes will influence the initial development of passion toward an activity: activity selection, activity valuation, and the internalization of the activity representation in one's identity. Activity

² It should be noted that there is a third subscale in the Passion Scale. This subscale serves to assess the passion criteria of activity valuation, degree of involvement (time and energy expenditure) and love for the activity, as well as the participant's perception of his or her activity as being a “passion.” This subscale is very useful in allowing researchers to determine if someone is passionate or not.

selection refers to the person's preference for the activity over other activities. To the extent that the person feels that such selection reflects true choice and interests and is consonant with one's identity, it should promote the development of passion toward that activity. Activity valuation (or the subjective importance given to the activity by the person) is expected to play an important role in the internalization of the activity in identity. Research has indeed shown that when the object of interest is highly valued and meaningful, one is inclined to internalize the valued object, to make it part of him or herself (Aron et al., 1992; Deci et al., 1994). The more important (or valued) the activity, then the more the activity will be internalized in the person's identity, and the more passionate the person will be toward this activity. Thus, activity valuation can be seen as the intensity (or quantity) dimension (the fuel) underlying activity internalization and the development of passion.

The DMP further posits that once an interesting activity becomes highly valued, the type of passion that will ensue is determined by the type of internalization that takes place. This last process can be seen as affecting the "quality" dimension or the type of passion that will take place. In line with Self-Determination Theory (Deci & Ryan, 2000), two internalization processes are hypothesized to be involved, the autonomous and the controlled internalization processes. An autonomous internalization of the activity representation is expected to lead to the development of harmonious passion, whereas a controlled internalization is hypothesized to lead to an obsessive passion. The DMP further proposes that one important determinant of the internalization process is the extent to which the social environment promotes one's autonomy (Deci & Ryan, 1987) toward activity selection and activity valuation. Much research has shown that autonomy support (or promoting choice and self-initiation of another person's behavior) from parents and teachers facilitates children's autonomous internalization of values and regulations of uninteresting activities such as school (see Grolnick & Ryan, 1989; Mageau & Vallerand, 2003; Vallerand et al., 1997). Similarly, the DMP proposes that autonomy support facilitates the autonomous internalization of the interesting activity in one's identity, thereby leading to harmonious passion. Conversely, once a given activity has been selected and is highly valued by the individual, a controlling environment should facilitate a controlled internalization of the activity in one's identity, thereby leading to an obsessive passion for the activity.

We tested some of the above hypotheses in a recent study (Mageau et al., 2009a, Study 3). First-year high-school students who had never played a musical instrument completed a series of questionnaires early in the term assessing activity selection and valuation (perceived parental activity valuation and both perceived parental and children activity specialization), perceived autonomy support from parents and music teachers, as well as

the extent to which students perceived music as potentially part of their identity. By following participants who were registered in their first music class over the course of their first semester, we sought to predict who would develop a passion for music at the end of the term, and, among those who did, predict those who would develop a harmonious or an obsessive passion. Based on the passion criteria (see the third subscale in [Table 3.1](#)), it was possible to identify that 36% of the sample was at least moderately passionate for music at the end of the term (having obtained an average of 4 and above on the four criteria). The fact that only a minority of students developed a passion for music was to be expected as the music courses were a compulsory part of the curriculum and did not necessarily reflect a personal choice from students' part. More generally, these findings suggest that people do not develop a passion for any or all activities that they engage in.

Results of a discriminant function analysis revealed that students who ended up being passionate for music (36% of the sample) at the end of the term had reported higher levels of activity valuation and specialization, identity processes, and parental and teacher autonomy support earlier in the term than those students who did not turn out to be passionate. Furthermore, high levels of autonomy support from close adults (parents and music teachers) were conducive to the development of harmonious passion. However, high levels of parental perceived valuation for music (probably experienced as external pressure) and lack of autonomy support (or its opposite, controlling behavior from close adults) predicted the development of obsessive passion. In sum, these results provided support for the role of activity selection and valuation, identity processes, and autonomy support from significant adults in the development of a passion for music in general, and harmonious and obsessive passion in particular.

We have seen above that the social environment represents an important determinant of the internalization process that takes place, leading to the initial development of passion. In a similar fashion, personal factors (i.e., individual differences and personality processes) constitute a second important determinant of the internalization process, and thus indirectly, of the type of passion that initially develops (on this issue, see [Vallerand & Houlfort, 2003](#); [Vallerand & Miquelon, 2007](#)). The DMP posits that personal factors that orient the individual toward autonomy will facilitate the autonomous internalization process and thus lead to the initial development of harmonious passion. Conversely, personal factors that lead the person to feel controlled while engaging in the activity will trigger the controlled internalization process and lead to the development of obsessive passion.

Past research (for reviews, see [Vallerand, 1997](#); [Vallerand & Ratelle, 2002](#)) has shown that an autonomous personality orientation (having a tendency to do things out of pleasure and/or choice) leads to the internalization of uninteresting activities in the self, whereas a controlled personality

orientation (a tendency to do things out of external and/or inner pressure) leads to the controlled internalization of noninteresting activities in the person (Guay et al., 2003; see also Vallerand, 1997, 2001). It thus appears that an autonomous personality is associated with the autonomous internalization process whereas a controlled personality is associated with a controlled internalization style. In light of the above, to the extent that people highly value an enjoyable activity, those with an autonomous personality should be more likely to facilitate the development and maintenance of a harmonious passion. On the other hand, a controlled personality should be more conducive to obsessive passion. Recent research by Vallerand et al. (2006) conducted with athletes supported the above hypotheses. Specifically, Vallerand et al. (2006, Study 1) reported the results of a structural equation modeling analysis that showed that valuation of the sport activity and an autonomous personality (as assessed by the Global Motivation Scale; Guay et al., 2003) both predicted harmonious passion. On the other hand, a controlled personality and valuation of the activity both predicted obsessive passion. These findings appear in Fig. 3.1. Furthermore, these findings were replicated in a second study (Vallerand et al., 2006, Study 3) using a short longitudinal design.

The results presented above provide support for the role of personal factors, and specifically, the autonomous versus controlled personality, in the development of passion. However, there were some limitations, including the fact that participants in both studies had been playing their respective sport for some time already at the time of the study (5.5 years in Study 1 and 4.7 years in Study 3). Thus, as such, these findings are probably more relevant to the on-going, than the initial, development of passion. However, recent research (Lafrenière et al., 2009b, Study 2) has attempted to look at the role of the autonomous versus controlled personality in the *initial* development of passion more directly through an analysis of additional data in the Mageau et al. (2009a, Study 3) study. In this study, the music students had also completed the Global Motivation Scale (Guay et al., 2003) at Time 1 and the Passion Scale and a scale assessing music valuation 4 months later, at Time 2. Results from a path analysis using structural equation modeling replicated the results from Vallerand et al. (2006, Studies 1 and 3). That is, music valuation positively predicted both harmonious and obsessive passion. Furthermore, the autonomous personality predicted harmonious passion and the controlled personality predicted obsessive passion. Moreover, these results held up even controlling for autonomy support provided by music teachers and parents. In fact, both the social (autonomy support from the music teacher and parents) and the personal factor (the personality style) had independent effects as theoretically hypothesized on harmonious and obsessive passion. Because this study looked at the development of passion from day 1 (these participants had never played a musical instrument prior to the start of the study), we can be confident that both social and

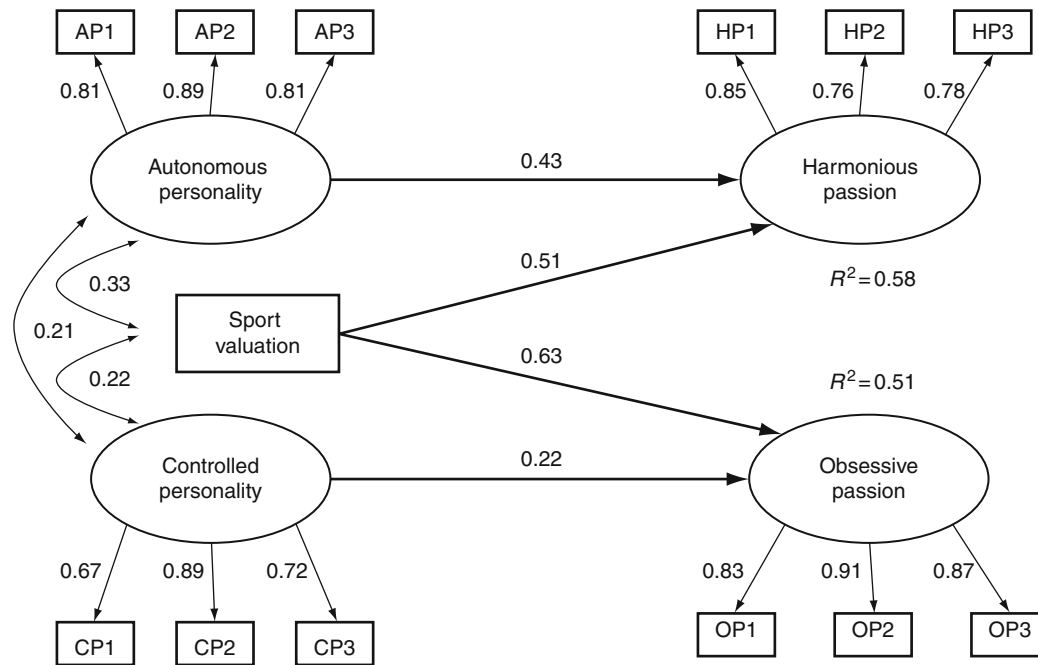


Figure 3.1 Results of the structural equation modeling analyses on the role of activity valuation and personality processes in the prediction of passion. From [Vallerand et al. \(2006, Study 1\)](#); reprinted with permission. For sake of clarity, the disturbances and the covariances are not presented.

personal factors play a key role in the *initial* development of passion. Nevertheless, future research is necessary to replicate these findings with other activities and participants.

4.2. On the on-going development of passion

We have seen above that the type of passion that will initially develop depends on how the activity is internalized in the person's identity. Given equally high levels of activity valuation, an autonomous internalization process should lead to a predominant harmonious passion and a controlled internalization process to a predominant obsessive passion. The DMP further posits that once a passion for a given activity has initially developed, its development continues as it is on-going. Thus, increases and decreases in activity valuation will lead to similar modulation in the intensity of passion. Further, the presence or absence of social and personal factors that pertain to the autonomous versus controlled internalization process will influence the on-going development of passion in a corresponding fashion. Of course, the internalization process is not an all or none process. Although the internalization process leads to the initial development of a predominant type of passion, both types of passion are nevertheless present within the individual to different degrees depending on the social and personal factors at play. The fact that both types of passion are internalized in identity makes it possible to facilitate one or the other by making salient certain social or personal factors. Thus, although the predominant type of passion is usually in operation, it is possible to further reinforce the predominant passion or to make the other type of passion operative depending on which type of social or personal factors is made salient. Below, we look at research that has started to test some of these issues.

4.2.1. Social determinants

Social factors can affect the on-going development of passion, once passion has been initially developed. For instance, recent research conducted in organizational settings underscores the role of organizational and interpersonal variables in such a process. A first variable that was examined is organizational support. Organizational support refers to the extent to which employees perceive that the organization values workers' contributions and cares about their well-being (Eisenberger et al., 1986). Organizational support, then, would be akin to autonomy support provided to the individual by the organization. Thus, it can be hypothesized that organizations that value their employees' work and that make a genuine effort to provide employees with a healthy, flexible, and secure working environment, where their opinion is valued, create conditions that should facilitate harmonious passion. A recent study (Houliort et al., 2009a, Study 1) tested this hypothesis. In this study, individuals who had been working for several

years in various organizations completed a questionnaire assessing perceptions of organizational support, the valuation process, and passion. Results from a path analysis revealed that organizational support and work valuation both positively predicted harmonious passion. However, as hypothesized, only work valuation predicted obsessive passion. Organizational support proved to be unrelated to obsessive passion.

Results from the above study revealed that a social factor at the organizational level, such as organizational support, can positively influence harmonious passion for work. Can other organizational factors affect both types of passion? Further, can interpersonal factors also affect passion? We examined these issues in a second study (Houlfort et al., 2009a, Study 2). Here, the organizational factor that was studied was the prevalent organizational culture. Based on the work of Cameron and Quinn (2006), two particular types of cultures were thought to be relevant, namely the clan and market cultures. The clan culture refers to an environment that promotes positive relationships and caring for the individual worker, whereas the market culture puts forward a more cut-throat setting wherein within-group competition rather than cooperation is promoted. It would thus be expected that a clan culture should promote harmonious passion, whereas a market culture should facilitate obsessive passion. The interpersonal factor assessed was the leadership provided by the immediate supervisor. We focused on two types of leadership, namely transformational and transactional leadership. Transformational leadership (Bass, 1985) entails providing subordinates with intellectual stimulation, individualized consideration, and inspirational motivation provided in a charismatic fashion. As such, this type of leadership should facilitate harmonious passion because it makes the task more interesting and valued while supporting autonomy through individualized consideration. On the other hand, transactional leadership (Bass, 1985) refers to using resources to have subordinates act as expected by the leader. Thus, through the monitoring of subordinates' behavior and the use of contingent rewards, the leader seeks to obtain from subordinates what he or she feels is equitable. Because it sets up the environment in a manner that is conducive to a controlling climate, transactional leadership should promote obsessive passion. In this study, 150 regular workers completed scales assessing leadership perceptions of their immediate supervisor (transformational and transactional leadership), the organizational culture (clan vs. market) prevalent in their organization, and passion for their work. Results from a path analysis revealed, as expected, that transformational leadership and the clan culture positively predicted harmonious passion for work. On the other hand, transactional leadership and the market culture positively predicted obsessive passion.

We have seen previously in Mageau et al. (2009a, Study 3) that autonomy support (i.e., promoting choice and self-initiation of another person's behavior) plays an important role in promoting the initial development of

harmonious passion. Similarly, the DMP posits that autonomy support should also help facilitate the on-going development of harmonious passion once it has been initially developed. Conversely, controlling behavior should facilitate the on-going development of obsessive passion once the passion has been initially developed. Research has provided support for this hypothesis. Thus, in one study with children at the intermediate level of expertise (over 3 years of involvement in various fields of excellence; [Mageau et al., 2009a](#), Study 2) and in a second one with young adults at the expert phase (10 years of music involvement; [Mageau et al., 2009a](#), Study 1), the main variable that distinguished harmonious from obsessive passion was autonomy support. Specifically, harmoniously passionate performers experienced higher levels of autonomy support from their teachers and coaches than obsessively passionate individuals in both studies. These results have been replicated with a different sample of music performance students at the expert level involved in highly rated international summer schools ([Bonneville-Roussy & Vallerand, 2009](#)) and with high-level athletes where autonomy-support behaviors were reported by the coaches themselves ([Donahue et al., 2009a](#)). Furthermore, in line with hypotheses from the DMP, controlling behavior as reported by coaches was found to facilitate athletes obsessive passion.

The above findings would appear to be important for at least two reasons. First, they provide support for the DMP as pertains to the important role that social factors play in the on-going development of harmonious and obsessive passion once passion has developed. Second, as demonstrated in the [Donahue et al. \(2009a\)](#) study, the supervisor's autonomy support and controlling behavior are not simply present in the passionate individual's head but rather derive from the supervisors themselves and are readily observable by individuals in contact with them. It would thus appear that individuals in position of authority influences the nature of the environment and thus contribute in important ways in instilling a harmonious or obsessive passion in subordinates.

4.2.2. Personal determinants

We have also assessed the role of personal factors in the on-going development of passion. One personal factor that would appear relevant is the values held by the individual. Past research (e.g., [Kasser, 2002](#); [Kasser & Ryan, 1993](#)) has shown that people can have at least two types of values: intrinsic and extrinsic. Intrinsic values refer to those values that are consonant with one's psychological needs of competence, autonomy, and relatedness and thus are inherently satisfying to pursue. Intrinsic values of self-acceptance, affiliation, and community feeling are particularly important. On the other hand, extrinsic values reflect the relative importance of social praise and rewards. They typically reflect a means to some other ends. Financial success, image, and popularity represent typical extrinsic values. We believe

that these different types of values orient individuals toward one of the two types of passion. Because the intrinsic values are rooted in the authentic self (Kasser, 2002), they should promote harmonious passion. Extrinsic values, however, should facilitate obsessive passion because they reflect controlled and ego-invested self-structures.

One activity that would appear particularly relevant to test the above hypotheses is collecting (stamps, rocks, etc.). Indeed, collectors are typically highly passionate, talking with high enthusiasm about the pieces of their collection. Furthermore, collectors show high levels of persistence, sometimes collecting the same type of pieces for a lifetime. Finally, collectors' passion may also reflect different sets of values. Whereas some collectors seem oriented to self-enhance and experience a boost of ego through their collection, others would appear to learn and grow from it. In other words, both intrinsic and extrinsic values seem at play in collecting. It should then become possible to test the hypothesized relationships between values and passion with such a population.

In a first study (Grenier et al., 2009, Study 2), 100 individuals who had been collecting stones and stamps on average for 22 years completed a questionnaire assessing their passion for collecting and their values (using the Grouzet et al., 2005 questionnaire). Results from structural equation modeling using path analysis supported the hypotheses. Specifically, intrinsic values positively predicted the adoption of harmonious passion whereas extrinsic values predicted obsessive passion. These findings do support the hypothesis that values represent an important personal factor that serves to facilitate or maintain a predominant type of passion that has been present for several years within the individual (in fact for over 20 years for the collectors!). These findings were replicated in a study with individuals selected as important society contributors in the Province of Quebec (Vallerand et al., 2009, Study 1).

Individuals passionate about a given activity not only care a great deal about the activity, but typically want to do very well at it. Thus, a relevant personal determinant of passion might be perfectionism. Perfectionism refers to holding excessively high standards of achievement (Hewitt & Flett, 2002). These authors have proposed a multidimensional model of perfectionism that includes three types of perfectionism, two of which are particularly important for the present purposes. Self-oriented perfectionism represents the first type of perfectionism. It refers to holding excessively high standards for oneself and not for others. This type of perfectionism is under the person's control and involves standards that may be changed by the person in a proactive manner. It typically leads to positive outcomes and has been termed "positive perfectionism" (see Miquelon et al., 2005). The second type of perfectionism of importance is socially prescribed perfectionism. It refers to the perception that significant others are imposing excessively high standards on oneself and that one must meet these standards to please others. It typically leads to negative outcomes (see Miquelon et al.,

2005 for a review). Because the first type of perfectionism takes origin in the autonomous self, one would suggest that it should predict having a harmonious passion toward an activity that we highly value. On the other hand, because the second type of perfectionism (i.e., socially prescribed perfectionism) is rooted in external control, one would predict that it should lead to obsessive passion. Results of two studies conducted with individuals involved in a variety of physical activities and sports (Schiphof et al., 2009) provided support for these hypotheses.

A final issue that deserves attention deals with the change that may take place in passion over time. In line with the DMP, one defining characteristic of passion is that the activity becomes part of one's identity. Thus, passionate individuals should see the activity as being part of their identity much more than nonpassionate individuals. Furthermore, one's autonomous versus controlled personality should determine if the passion would become more harmonious or obsessive over time. In research looking at these issues (Lafrenière et al., 2009b, Study 1), 165 university students were asked to complete the Passion Scale as currently experienced for an activity that was dear to their heart, as well as a measure of the activity as being currently part of their identity. Of importance, participants were also asked to recollect the early times when the activity became a passion for them and then to complete the Passion Scale as experienced early on at that point in time (the presentation order of the two Passion Scale, that assessed the current and initial passion, was counterbalanced and had no effects). Finally, participants also completed the Global Motivation Scale (Guay et al., 2003), a scale that assesses the autonomous versus controlled personality orientation. A path analysis using structural equation modeling analysis was conducted on the data, controlling for the initial passion. Results revealed that activity valuation predicted increases in both current harmonious and obsessive passion. Furthermore, as expected, an autonomous personality predicted increases in harmonious passion, whereas a controlled personality predicted augmentations in obsessive passion. Although the use of a retrospective design is fraught with obvious problems, the results are nevertheless suggestive that the process of changes in passion may function as hypothesized. Clearly, future research is needed on this issue.

In sum, results presented in this section provide support for the DMP as pertains to the development of passion. Specifically, social and personal factors that have some bearing on the internalization process along with the valuation process lead to the initial development of passion. Later on, social and personal factors that are relevant for the internalization process remain involved in the on-going development of passion. Additional research is needed to determine more clearly the vicissitudes of the newly developed passion as a function of prevalent social and personal factors.



5. PASSION AND INTRAPERSONAL OUTCOMES

In this section, I review research on the role of passion in a number of outcomes. These include cognitive and affective processes, well-being and addiction, physical health, and performance.

5.1. Passion and cognitive processes

Based on the DMP, it would be expected that harmonious passion should facilitate adaptive cognitive processes whereas obsessive passion should not, or at least less so. This is so because with harmonious passion, integrative self processes are at play leading the person to fully partake in the passionate activity with an openness that is conducive to mindful attention, concentration, and flow. The situation is different when obsessive passion is at play because ego-invested processes are involved (Hodgins & Knee, 2002). Such processes lead individuals to have an eye on the task, but another on external elements such as the outcomes and other participants, with a defensive orientation that only permits a partial investment in the activity. Thus, less than full attention, concentration, and flow should be experienced in the process. Research provides support for this hypothesis. For instance, in research by Vallerand et al. (2003, Study 1), participants were asked to complete the Passion Scale as well as indicate to what extent they typically experience high levels of concentration while they engage in the passionate activity. A similar procedure was used in research on gambling (e.g., Mageau et al., 2005) and sport refereeing (Philippe et al., 2009a, Study 2). The results of partial correlations from such research revealed that harmonious passion correlated more strongly with concentration on the passionate activity than obsessive passion.

Another form of concentration was empirically scrutinized in research with English soccer fans (Vallerand et al., 2008b, Study 1). In this study, we observed the effects of an upcoming soccer match on the concentration that passionate soccer fans are able to display during other life activities that take place the day of the upcoming night game. Results revealed that obsessive passion for soccer prevented full concentration during same day on other life activities whereas this was not the case for harmonious passion. These results were replicated by Ratelle et al. (2009, Study 1) in regards to romantic love. Specifically, obsessive (but not harmonious) passion for the loved one led to low levels of concentration on life tasks when one was prevented from seeing his or her partner.

It would thus appear that although harmonious passion facilitates concentration during engagement in the passionate activity, it does not detract from full engagement in other life activities that take place while waiting to

engage in the passionate activity. However, obsessive passion detracts from fully concentrating both during engagement in the passionate activity and in other life activities while waiting to partake in the passionate one. Future research is needed to determine the nature of the mediators of such negative anticipatory effects. One potential candidate is rumination. Past research has shown that obsessive passion does predict rumination about the passionate activity, especially when one is prevented from engaging in the activity at the time that one is thinking about it (Ratelle et al., 2004; Vallerand et al., 2003, Study 1). Clearly, the role of rumination about the passionate activity in preventing one from fully engaging in other life tasks should be investigated further as it may shed light on some of the processes involved in psychological well-being.

Another cognitive concept of interest is flow (Csikszentmihalyi, 1978; Csikszentmihalyi et al., 1993). Flow refers to a desirable state that people experience when they feel completely immersed in the activity (e.g., “I have a feeling of total control”). Because harmonious passion allows the person to fully partake in the passionate activity with a secure sense of self-esteem, flexibility, and an openness to experience the world in a nondefensive, mindful manner, it should be conducive to focusing on the task at hand and consequently to experiencing flow. Conversely, with obsessive passion, internally controlling, rather than integrative self-processes are at play leading the person to engage in the activity with a fragile and contingent sense of self-esteem (e.g., Crocker, 2002; Kernis, 2003), and eventually becoming defensive rather than open to experience. Such a state should not be conducive to the experience of flow. Using cluster analyses, Wang et al. (2008) looked at the role of passion in flow in online gaming. They found that passionate individuals experienced more flow relative to less passionate individuals. Although these findings underscore the fact that passionate “gamers” experience higher levels of flow than nonpassionate individuals, these findings are not entirely clear because Wang and colleagues (2008) did not differentiate between harmonious and obsessive passion in their analyses. In the initial study of Vallerand et al. (2003, Study 1), we had participants involved in a variety of activities complete various flow indices (including the challenge, absence of self-consciousness, and control dimensions of flow; Jackson & Marsh, 1996) as well as the Passion Scale. The results did reveal that harmonious passion facilitates the experience of flow, whereas obsessive passion typically does not. These results have been replicated in a number of studies, including some in sport with 90 national and international soccer referees from France (Philippe et al., 2009a, Study 1), as well as in the work domain with workers involved in diverse types of jobs (Forest et al., 2008, 2009). The results of the Vallerand et al. (2003, Study 1) and Philippe et al. (2009a, Study 1) studies appear in Fig. 3.2.

A final cognitive process that has been examined is decision making. Decision making, like most cognitive processes, is perhaps most revealed in

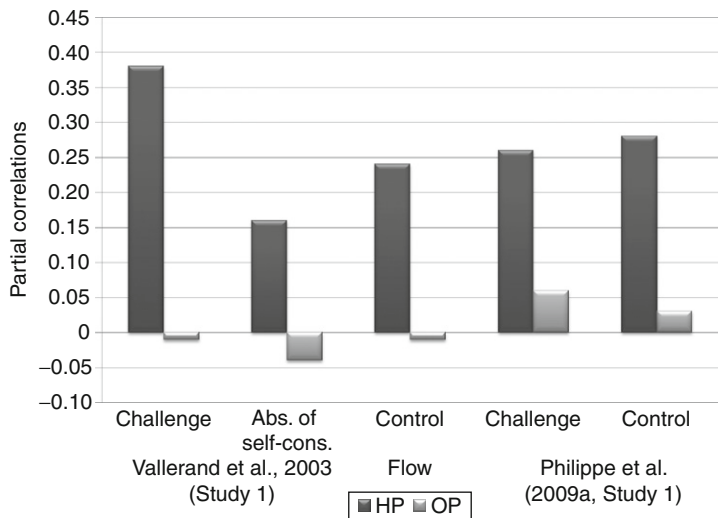


Figure 3.2 Partial Correlations (controlling for the other type of passion) between Passion and Various Flow Indices (Challenge, Control, and Absence of Self-Consciousness) during Activity Engagement. Adapted from Vallerand et al. (2003; Study 1) and Philippe et al. (2009a).

real-life situations (Neisser, 1976) and especially under pressure. This is because such situations typically entail making important decisions that need to be made quickly. It is thus possible to unveil optimal decision-making processes. One such real-life situation takes place in sport refereeing after having made a bad call (e.g., Dorsch & Paskevich, 2007). Referees' reactions and strategies to deal with their own mistakes vary drastically, ranging from rumination over the error, lack of concentration, to even engaging in make-up calls (i.e., favoring the party or team that has been unjustly penalized by the poor call [Wolfson & Neave, 2007]). Make-up calls are particularly interesting as they amount to deliberately making a second poor decision, after the first error. Make-up calls represent the type of decision-making processes that referees should try to avoid at all costs as they can potentially entrap themselves in a vicious circle of unending poor decisions. On top of this, such decision-making processes can drive players crazy because refereeing then becomes unpredictable.

Based on the DMP, it can be hypothesized that passion might account for the different ways in which referees react after having committed an important error. Because harmonious passion emanates from the integrating self, making an error should be accepted as such without experiencing a self-threat that one needs to remove through an immediate correction (i.e., a make-up call). Consequently, with harmonious passion, it should prove possible to deal with the situation without engaging in make-up calls to

repair the first mistake. Conversely, with obsessive passion, the person's identity is attached contingently to the activity such that doing well on the passionate activity becomes important for one's self-esteem. Therefore, making an error becomes highly self-threatening leading one to seek to remove the threat through a make-up call. [Philippe et al. \(2009a, Study 2\)](#) conducted a study to test these hypotheses. European soccer referees (including some professional referees) completed the Passion Scale as well as their tendency to engage in make-up calls after having made an important mistake. Results revealed, as expected, that subsequent to an important error obsessive passion was *positively* associated with engaging in make-up calls. Conversely, harmonious passion was *negatively* associated with make-up calls. Thus, as hypothesized, obsessive passion was found to undermine, whereas harmonious passion found to facilitate, optimal cognitive functioning and decision making.

Clearly, the two types of passion lead to different cognitive functioning, with harmonious passion leading to the most adaptive and obsessive passion to the least adaptive types of cognitive processes. Future research on the role of coping strategies as mediators in the relationship between passion and cognitive functioning would appear important, especially under pressure situations.

5.2. Passion and affect

Historically, in the reasoning of philosophers, passion and emotion were closely linked. There is a good reason for this, as people highly value the activity they are passionate about. Given that task valuation increases affect ([Brown & Weiner, 1984](#)), being passionate for an activity would also increase affect. However, such affect should differ as a function of the type of predominant passion held by the person. Thus, with harmonious passion, people volitionally engage in the passionate activity with an openness and a mindfulness that allow them to fully partake in the activity, and thus to experience positive affective experiences ([Hodgins & Knee, 2002](#)) during task engagement (e.g., positive affect). Furthermore, the lack of conflict with other life activities that harmonious passion entails should maximize the duration of the positive affect experienced during activity engagement and lead one to experience positive self-related affect after task engagement. Finally, because task engagement is volitional, one is unlikely to experience negative affect when unable to engage in the passionate activity (such as feelings of dependence).

Conversely, with obsessive passion, one engages in the activity with a defensive, rather than an open, orientation preventing one from fully experiencing the positive emotions that should be derived from engaging in one's favorite activity. Moreover, because engagement is often out of one's control, and may be performed at ill-advised times, some conflict may

thus be experienced with other life activities, thereby preventing one from fully enjoying participation in the passionate activity and leading one to experience negative affect following task engagement (e.g., guilt, shame, anxiety). Finally, one is likely to experience high levels of negative affect when prevented from engaging in the passionate activity because engagement in the passionate activity out of obsessive passion is experienced as an uncontrollable desire to partake in the activity. Consequently, being prevented from engaging in the passionate activity should lead to some sense of suffering.

Results from partial correlations between the two types of passion and affective variables have supported these hypotheses in a number of studies. For instance, [Vallerand et al. \(2003, Study 1\)](#) asked college students who were passionate toward an activity to complete the Passion Scale and to report the positive and negative emotions they typically experience during and after task engagement, as well as when they are prevented from engaging in their passionate activity. Results from partial correlations (controlling for obsessive passion) revealed that harmonious passion was positively associated with positive experiences such as positive emotions during activity engagement. In addition, harmonious passion was positively related to positive emotions and the absence of negative affect following task engagement, and the absence of negative emotions when prevented from engaging in the passionate activity. On the other hand, when controlling for harmonious passion, obsessive passion was positively associated with negative emotions (especially shame) and unrelated to positive emotions both during and following activity engagement. Furthermore, obsessive passion was strongly related to negative affect when one is prevented from engaging in the activity. These results have been replicated in several contexts and activities (e.g., [Mageau et al., 2005](#); [Philippe et al., 2009a](#), Study 1; [Ratelle et al., 2004, 2009](#); [Vallerand et al., 2006](#), Studies 2 and 3).

We have seen so far that obsessive passion rarely predicts positive affect. However, should not one expect obsessive passion to be conducive to some forms of positive affect at least some times or in certain situations? For instance, given that the passionate activity is internalized in one's identity, might it be expected that affect related to the self (e.g., proud, confident, competent, etc.) is positively related to both obsessive and harmonious passion? We have tested this hypothesis in a recent study with collectors ([Grenier et al., 2009](#), Study 2). In this study, we asked 115 collectors to complete the Passion Scale as well as scales assessing positive self-related affect (e.g., proud, valued), positive (nonself) affect (e.g., happy, joyful), and negative affect typically experienced during a purchasing episode (e.g., anxious). Results of partial correlations revealed that, controlling for obsessive passion, harmonious passion positively predicted the two different types of positive emotions, but was unrelated to negative affect. On the other hand, controlling for harmonious passion, obsessive passion predicted the

experience of negative emotions but also, as expected, positive self-related affect. As in past research, obsessive passion was not significantly related to general (nonself) positive affect.

In a second study, Grenier et al. (2009, Study 2) went further and hypothesized that there might be some situations where obsessive passion leads to the experience of both types of positive emotions, just like harmonious passion. One of these situations should be following an important successful experience such as acquiring an important new piece for one's collection. Indeed, such a successful experience should represent a strong enough event to lead to the experience of both types of positive affect. This is because conditions of high success such as this one should lead to a sense of self-validation for those with a predominant obsessive passion that should facilitate the experience of self-related affect and the concomitant general positive affect. Therefore, obsessive passion, just like harmonious passion, should then lead to both types of positive affect, as well as to some negative affect (e.g., anxiety). However, harmonious passion, once again, should positively predict both types of positive affect but not negative affect. Grenier et al. (2009, Study 2) had collectors recall how they typically feel after having acquired an important piece for their collection. They assessed the two types of positive affect, as well as negative emotions. Results supported the above hypotheses.

Results reported so far have been obtained with participants who are actively involved in activities such as collecting, playing sports, and others. Would the same results be obtained with individuals whose passion can be seen as experienced vicariously as is the case for sport fans (Vallerand et al., 2008b). The DMP posits that it should indeed be the case to the extent that the activity (in this case, sport) is internalized in the fans' identity. Specifically, when sport fans are passionate for their favorite team, the latter is internalized in their identity, allowing them to experience emotions as if they were actually playing themselves. As Vass (2003) suggested, it would appear that when sport fans cheer their team on, they also "cheer for self," because their favorite team is also part of their self. Vallerand et al. (2008b, Studies 1 and 2) have recently tested some of these hypotheses. In one study (Vallerand et al., 2008b, Study 2), Canadian fans of the two finalist countries (France and Italy) in the 2006 World Soccer Cup Finals completed the Passion Scale and both general and positive self-related emotions experienced up to that point in the tournament. Results replicated those of Grenier et al. obtained during the acquisition phase. Specifically, harmonious passion positively predicted both types of positive affect. On the other hand, obsessive passion correlated positively only with positive self-related affect.

The results from the above research (Grenier et al., 2009, Study 2; Vallerand et al., 2008b, Study 2) are important because they show that, in addition to negative affect, there are some types of positive affective experiences (i.e., self-related affect) that can be derived from activity engagement

fueled by obsessive passion. Furthermore, under certain situations (i.e., an important success), obsessive passion may also lead to the same types of positive affect as harmonious passion. Future research is needed in order to replicate these findings in various situations and activities. Finally, the fact that passionate fans can react affectively in a manner very similar to the players that they cheer for deserves future scientific scrutiny. For instance, it is obvious that fans do not always experience the same emotions as the players (if they did, they would never boo the players). So, the conditions under which fans experience similar versus dissimilar emotions relative to players deserve attention as research on this issue could lead to important insights on the role of identity in the emotional functioning of highly involved (passionate) individuals.

One interesting question with respect to affect is “If passion contributes to situational affective experiences can it also influence one’s general affect in life (i.e., outside the purview of the passionate activity)?” Indeed, it could be hypothesized that because the passionate activity is highly valued, affect experienced as a function of engagement in the passionate activity should spill-over in one’s life in general. To test this hypothesis, [Mageau and Vallerand \(2007\)](#) conducted a diary study in which they followed university students for 14 days. At Time 1, participants completed the Passion Scale with respect to their favorite activity as well as a short general positive affect scale (the short version of the PANAS; [Watson et al., 1988](#)). Then, for the next 13 days, each night before going to bed, participants indicated if they had engaged or not in their passionate activity and responded to the positive affect scale. Results from HLM analyses showed that on days when participants engaged in their passionate activity, harmonious (but not obsessive) passion increased general positive affect experienced at the end of the day (controlling for Time 1 positive affect). Furthermore, on days when they did not engage in a passionate activity, obsessive (but not harmonious) passion predicted a decrease in people’s positive affect. These findings suggest that the positive affective experiences triggered by harmonious passion within the realm of the passionate activity linger at least to the end of the day and seem to generalize to one’s life in general. In addition, the findings obtained with obsessive passion are in line with those of [Vallerand et al. \(2003, Study 1\)](#) that showed that when one cannot engage in the passionate activity, obsessive passion leads to some emotional suffering (in this case a drop in positive affect).

Although informative, the [Mageau and Vallerand \(2007\)](#) study only lasted 14 days. In addition, negative affect was not assessed. What about the more long-term effects of passion on general positive and negative affect? A study by [Vallerand et al. \(2003, Study 2\)](#) attempted to provide an answer to this question. The authors followed collegiate football players over the course of an entire football season and assessed passion and positive and negative affect prior to and after the end of the season. Results revealed

that harmonious passion predicted an increase in general positive affect, whereas obsessive passion predicted an increase in general negative affect, in one's life over the course of an entire football season. Furthermore, these findings were obtained while controlling for intrinsic and extrinsic motivation toward football. Thus, passion matters not only with respect to situational affect experienced within the purview of the passionate activity, but also as pertains to general affect in life.

5.3. Passion and psychological well-being

If harmonious and obsessive passion are respectively conducive to increases in general positive and negative affect over time as shown in research presented previously (Mageau & Vallerand, 2007; Vallerand et al., 2003, Study 2), is it possible that they also affect one's psychological well-being? Research supported this hypothesis. For instance, in a study with senior individuals, Rousseau and Vallerand (2003) showed that harmonious passion positively predicted positive indices of psychological well-being (life satisfaction, meaning in life, and vitality) but negatively predicted negative indices (anxiety and depression). Conversely, obsessive passion positively predicted anxiety and depression, was negatively related to life satisfaction, and was unrelated to vitality and meaning in life. Research with young adults and teenagers using different measures has yielded similar findings. Specifically, harmonious passion is positively related to life satisfaction and vitality (Vallerand et al., 2007, Studies 1 and 2; Vallerand et al., 2008a, Study 2), whereas obsessive passion is either negatively related (Vallerand et al., 2007, Study 2) or unrelated (Vallerand et al., 2007, Study 1; Vallerand et al., 2008a, Study 2) to these indices.

In the research discussed so far, the focus was on people who are passionate for a given activity and how such passion relates to psychological well-being. Another way to look at the potential contribution of passion to well-being is to compare passionate and nonpassionate individuals. Such a strategy allows us to deal with a crucial question: "Does being passionate make a difference in people's life relative to being nonpassionate?" Initial research has started to answer this question as pertains to psychological well-being. For instance, in one study (Philippe et al., 2009b, Study 1), over 750 men and women aged between 18 and 90 years completed a questionnaire assessing the passion criteria (i.e., loving and valuing the activity, spending regular time on the activity, and the activity being perceived as a "passion"; see Table 3.1) and the harmonious and obsessive passion subscales with respect to an activity that was dear to their heart. Participants also completed scales assessing hedonic (i.e., life satisfaction; Blais et al., 1989) and eudaimonic well-being (i.e., self-realization; Ryff & Keyes, 1995; see Miquelon & Vallerand, 2006, 2008, on this issue). Using the passion criteria discussed previously, we distinguished those individuals who were highly passionate

(a mean of 5 and more on a 7-pt scale on the 4 passion criteria) from those who were not. Furthermore, in line with [Vallerand and Houlfort \(2003\)](#), among the passionate individuals, those with a higher z -score on the harmonious passion than on the obsessive passion subscale were considered as “harmoniously passionate,” whereas those with a higher z -score on the obsessive than the harmonious passion subscale were considered as “obsessively passionate” (see also [Koestner & Zuckerman, 1994](#) for similar procedures). We then compared the three groups on the two types of psychological well-being indices.

The results showed that being harmoniously passionate for a given activity leads to higher levels of psychological well-being on both types of well-being relative to being nonpassionate (see [Fig. 3.3](#)). As in other research ([Vallerand et al., 2007](#), Studies 1 and 2; [Vallerand et al., 2008a](#), Study 2), being harmoniously passionate led to higher levels of well-being than being obsessively passionate. Nonpassionate and obsessively passionate individuals did not differ. It should be noted that age or gender did not interact with passion. Thus, the role of passion in well-being seems to be similar for both men and women across the lifespan. Furthermore, additional research ([Philippe et al., 2009b](#), Study 2) revealed that over a 1-year period, people who were harmoniously passionate for a given activity experienced a significant increase in psychological well-being, whereas obsessively passionate and nonpassionate individuals both experienced a slight, but significant, decrease in psychological well-being. In sum, it does appear that passionate activity engagement leads to increases in

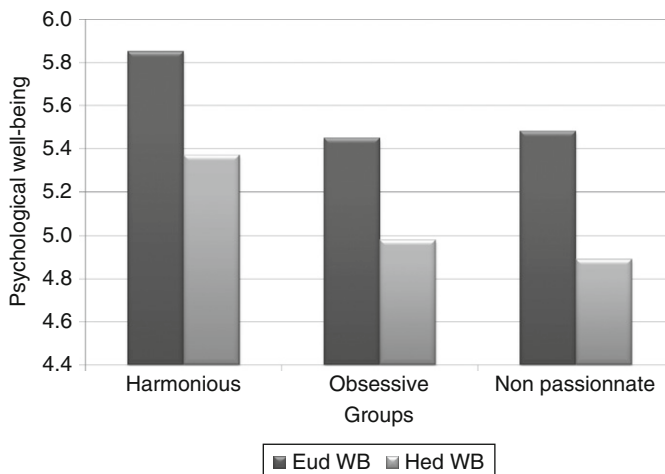


Figure 3.3 On the hedonic and eudaimonic well-being of harmoniously, obsessively, and nonpassionate individuals. Adapted from [Philippe et al. \(2009b\)](#), Study 1).

well-being relative to being nonpassionate. However, such psychological benefit is only conferred to those who are harmoniously passionate toward the activity.

If passion affects psychological well-being, then what are the processes mediating such effects? We feel that at least two processes are at play. A first refers to the repeated experience of situational (or state) positive affect during the course of engagement of the passionate activity. Much research has focused on the adaptive role of positive affect in a variety of outcomes, including well-being (Lyubomirsky et al., 2005; Sedikides et al., 2008). In one important line of research, Fredrickson (2001) has proposed and found support for a Broaden-and-Build Theory that posits that positive emotions are adaptive because they broaden people's thought-action repertoires and self, leading to better decisions and higher levels of psychological well-being. For instance, Fredrickson and Joiner (2002) uncovered the existence of a spiral where positive affect leads to higher levels of psychological well-being which then leads to subsequent experiences of positive affect and so on.

One key issue, however, pertains to the nature of the psychological processes that trigger the positive emotions so important for psychological well-being. We posit that regularly engaging in a meaningful activity out of harmonious (but not obsessive) passion can play that role. In the initial study on passion with college students, Vallerand et al. (2003, Study 1), it was found that passionate people spend on average approximately 8 h per week on the passionate activity. Some spend a lot more, especially if the passionate activity is their work (see Vallerand & Houliort, 2003) or an activity they want to devote themselves fully to such as music (Mageau et al., 2009a, Study 1) or "gaming" (Lafrenière et al., 2009a). In such cases, it is common to spend more than 20 h per week on the passionate activity. But even a "mere" 8 h per week represents roughly 10% of our waking time. Taking into consideration the fact that harmonious passion positively contributes to the experience of positive affect during activity engagement (e.g., Mageau et al., 2005; Vallerand et al., 2003, Study 1; Vallerand et al., 2006, Study 2), and that such positive affect seems to endure for a substantial period of time (Mageau & Vallerand, 2007), it would appear that harmonious passion can lead people to experience at least an additional 10% of cumulative positive affect per week on top of what may be experienced in other life domains. Such cumulative experience of positive affect may facilitate psychological well-being.

A recent study by Rousseau and Vallerand (2008) tested this hypothesis with senior individuals who had a passion for physical activity. At Time 1, participants completed the Passion Scale with respect to physical activity, as well as a measure of psychological well-being using the French form (Blais et al., 1989) of the Satisfaction with Life Scale (Diener et al., 1985). Five weeks later, at Time 2, immediately following an exercise session, they completed situational measures of general positive and negative affect experienced while exercising (e.g., feeling happy, joyful). Finally, 3 weeks later,

at Time 3, participants completed measures of psychological well-being again. Results from a path analysis using structural equation modeling revealed that harmonious passion positively predicted positive affect that led to *increases* in psychological well-being from Time 1 to Time 3. On the other hand, obsessive passion was unrelated to positive affect but positively predicted negative affect. The latter did not predict psychological well-being. These findings are illustrated in Fig. 3.4. These basic findings have been replicated in the work domain (Houlfort et al., 2009b) where it was shown that two affective indicators, namely work satisfaction (Study 3) and positive affective experiences at work (Study 4) mediated the positive effects of harmonious passion on different indices of psychological well-being. As in the Rousseau and Vallerand (2008) study, the negative relation between obsessive passion and well-being was direct and was not mediated by positive affect.

Overall, these findings provide strong support for the role of situational positive affect experienced during engagement in a passionate activity as a mediator of the positive effect of harmonious passion on psychological well-being. However, such research also showed that although obsessive passion is negatively related to psychological well-being, neither situational positive nor situational negative affect mediated the obsessive passion–psychological well-being relationship. So, what is the mediator of such a relation? One

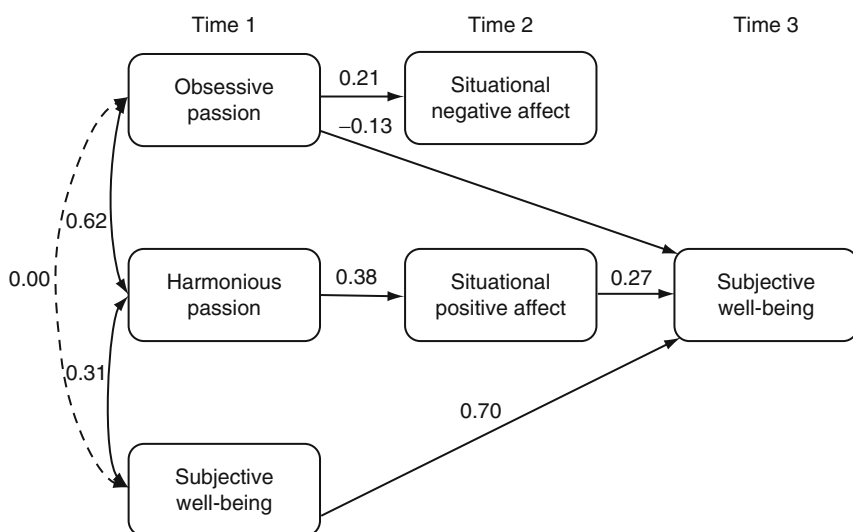


Figure 3.4 Results of the path analysis on the role of passion and affect in subjective well-being. From Rousseau and Vallerand (2008); reprinted with permission. For sake of clarity, the disturbances and the covariances are not presented.

likely candidate is the psychological conflict experienced between the passionate activity and other life activities. This constitutes the second process involved in the passion–well-being relation. Because with obsessive passion one experiences an uncontrollable urge to engage in the passionate activity, it becomes very difficult for the person to fully disengage from thoughts about the activity (or from the activity altogether), leading to conflict with other activities in the person's life. Such conflict can create additional stress in the person's life preventing him or her from enjoying other life pursuits. In addition, because obsessive passion is typically unrelated to positive affective experiences during activity engagement, at some point the person experiences little affective rewards in his or her life (both during task engagement in the passionate activity and in other life pursuits), leading to relatively low levels of psychological well-being. Conversely, with harmonious passion, the person can let go of the passionate activity after task engagement and fully immerse in other life pursuits without experiencing conflict between the two. Thus, harmonious passion should allow the person to experience affective rewards both during task engagement in the passionate activity as well as in other life pursuits, thereby leading to high levels of psychological well-being.

We have recently conducted research to test a model on professional burnout using psychological conflict and work satisfaction as mediators between the two types of passion and burnout. In line with the above reasoning, the model proposes that obsessive passion contributes to burnout, whereas harmonious passion prevents it, through their differential relations to work satisfaction and conflict between work and other life activities. More specifically, the model posits that obsessive passion produces conflict between work and other life activities, because the person cannot let go of the work activity. Furthermore, in line with past research (e.g., [Houlihan et al., 2009b](#)), obsessive passion should be unrelated to work satisfaction. Conversely, harmonious passion is expected to prevent conflict while positively contributing to work satisfaction. Finally, as discussed above, conflict is expected to contribute to burnout, whereas work satisfaction should prevent its occurrence. This model was tested in two studies ([Vallerand et al., in press](#), Studies 1 and 2) with professional nurses from two cultures (France and Quebec, Canada). In Study 1, 100 nurses from France completed scales assessing passion, psychological conflict, work satisfaction, and burnout. The results from structural equation modeling are displayed in [Fig. 3.5](#). It can be seen that the model was supported, even when controlling for the weekly number of hours worked. Specifically, obsessive passion facilitated the experience of burnout through the psychological conflict it induces between work and other life activities. On the other hand, harmonious passion prevented the experience of conflict and contributed to the experience of work satisfaction, thereby protecting the person from experiencing burnout. These findings were replicated in a

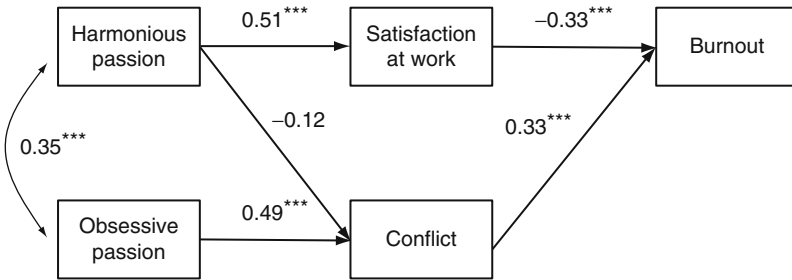


Figure 3.5 Results of the structural equation modeling analyses on the passion-burnout model. Reprinted from [Vallerand et al. \(in press, Study 1\)](#) with permission. For sake of clarity, the disturbances and the covariances are not presented.

second study using a prospective design with nurses from the Province of Quebec ([Vallerand et al., in press, Study 2](#)), allowing us to predict changes in burnout over a 6-month period.

Results from the [Vallerand et al. \(in press\)](#) research showed that harmonious and obsessive passions lead to different effects on burnout in part because they relate differently to conflict with other life activities outside of work. Specifically, harmonious passion leads one to be relatively free from conflict with other life activities and thus, presumably allows one to fully engage in nonwork activities. While doing so, harmonious passion for work helps individuals to replenish themselves in other activities and thus to prevent burnout. Conversely, because it leads to rumination about the activity (i.e., work) when away from it, obsessive passion should prevent one from fully engaging in these activities, and thus from recovering from stress at work, thereby facilitating the experience of burnout. Research by Sonnentag and colleagues has indeed shown that engaging in recovery activities (e.g., psychological detachment from work, relaxation, mastery activities) in one's free time predicts subsequent well-being ([Sonnentag & Zijlstra, 2006](#); [Sonnentag et al., 2008](#)). However, such research has not identified the nature of psychological variables that would allow one to let go of work and engage in such recovery activities, or conversely, that would put one at risk of neglecting engagement in recovery activities. As suggested above, the DMP posits that harmonious and obsessive passion, respectively, should lead to such effects.

In line with the above, [Crevier-Braud et al. \(2010\)](#) investigated further the role of the two types of passion in leading workers to engage (or not) in recovery activities outside of work and how these may mediate the impact of passion on burnout. These authors had workers complete the Passion Scale, the Recovery Experience Questionnaire ([Sonnentag & Fritz, 2007](#)), rumination about work outside of work, and burnout. Results of structural

equation modeling analyses revealed, as expected, that harmonious passion positively predicted engagement in recovery strategies that, in turn, prevented burnout. Conversely, obsessive passion did not relate to recovery experiences but positively predicted rumination about work that, in turn, positively predicted burnout.

The findings from the above research (Crevier-Braud et al., 2010; Vallerand et al., *in press*) are important for a number of reasons. First, they provide support for the role of obsessive passion for work in leading to burnout. Such effects take place through two routes. In the first one, obsessive passion prevents workers from replenishing themselves outside of work through rumination about work, psychological conflict between work and other life activities, and lack of engagement in recovery activities. In the second route, obsessive passion is unrelated to important positive affective experiences during activity engagement, namely work satisfaction. This is unfortunate as work satisfaction appears to serve as an antidote to burnout. Thus, it would appear that obsessive passion puts one at risk of developing burnout because of its impact on what transpires both at and away from work. Years ago, burnout researchers suggested that because of their passion, people remain strongly psychologically engaged in their work, cannot disengage from it, and under harsh conditions, come to experience burnout (e.g., Freudenberger & Richelson, 1981). The present findings suggest that such an analysis is only partially correct because it applies specifically to obsessive passion, but not to harmonious passion (for a similar analysis as pertains to passion, see Tassel & Flett, 2007).

Finally, the present findings also highlight the fact that with harmonious passion, instead of experiencing burnout, people actually come to thrive at work (Martin, 2005). Specifically, harmonious passion was found to prevent burnout through its positive and negative relations with work satisfaction and conflict, respectively. Thus, because harmonious passion leads to a more flexible task engagement toward work, one can enjoy one's experience at work and derive satisfaction from it. Furthermore, such a flexible engagement allows one to let go of work at the end of the day. Rather than experiencing conflict between work and life activities one can then fully enjoy life outside of work, engage in recovery activities, and consequently return to work refreshed the next day. In sum, the type of passion one holds toward work matters greatly as it sets in motion mediating processes that directly impact on psychological well-being and the prevention of psychological problems such as burnout.

As a closing note to this section, it should be underscored that the research conducted on passion and outcomes has been largely correlational in nature. Thus, a caveat is in order as pertains to causality issues. One recent study has attempted to shed some light on this issue. In this study (Carbonneau et al., 2008), a cross-lagged panel design was used where 500 teachers were asked to complete measures of passion toward teaching

as well as outcomes dealing with the teaching profession (satisfaction with teaching, perceived adaptive student behavior, etc.) twice over a 3-month period. Results of a cross-lagged path model with structural equation modeling revealed that passion predicted changes in outcomes whereas outcomes did not predict changes in passion. Passion, then, would appear involved in producing changes in psychological outcomes, whereas the reverse may not be true. Clearly, additional research on the causality issue between passion and outcomes is necessary before one can firmly conclude that passion *causes* outcomes. However, results from the [Carbonneau et al. \(2008\)](#) study suggest that it may indeed be the case.

5.4. Passion and addictive behaviors

Because the passionate activity is very dear to the heart of those who engage in it (after all, it is part of their identity), people are likely to persist in the activity for long periods of time. However, as described previously, there would seem to be some differences in the type of persistence associated with the two types of passion. With harmonious passion, the person is in control of the activity. As such, the person can decide when to and when not to engage in the activity and should even be able to drop out of the activity if the latter has become permanently negative for the person. Thus, behavioral engagement and persistence can be seen as flexible. Such is not the case with obsessive passion. Typically, because the activity has taken control of the person, obsessive passion would be expected to lead to persistence. However, such persistence can be seen as being rigid because it can take place not only in the absence of positive emotional experience, but even when important costs are accrued to the person. Such rigid persistence can lead the person to persist in the passionate activity even though some permanent negative consequences are experienced, eventually leading to addiction.

Individuals addicted to an activity come to lose control over it such that they no longer willfully choose to participate. Rather, engagement in the activity frequently reflects a lack of control over the urge to partake in the activity even when one should not. This aspect of dependence is similar to a characteristic of obsessive passion where the individual cannot help but engage in his/her activity as if the activity controlled the person rather than the opposite. For some individuals, the passionate activity can have profound negative psychological consequences. For other passionate people, however, the exact same activity might just be a great source of pleasure, entertainment, and harmless distraction. Therefore, it is reasonable to suggest that the two types of passion should be differently related to psychological addiction toward various activities, with obsessive passion being a stronger predictor of addiction than harmonious passion.

Research in the realm of gambling provides support for this analysis. For instance, research has shown that obsessive passion predicts pathological

gambling whereas harmonious passion does not (Philippe & Vallerand, 2007; Ratelle et al., 2004; Skitch & Hodgins, 2005). Furthermore, obsessive passion also predicts higher amounts of money gambled and more time spent gambling whereas harmonious passion is unrelated to these outcomes (Rousseau et al., 2002). In addition, obsessive passion has been found to be positively associated with negative emotions such as anxiety and guilt as well as with rumination when prevented from gambling, which suggest some form of dependence toward gambling (Ratelle et al., 2004). On the other hand, harmonious passion for gambling has typically been found to be positively related only to positive affective experiences while gambling such as pleasure, fun, and enjoyment (see Mageau et al., 2005).

The research above suggests that obsessive passion predicts the occurrence of pathological gambling, presumably because obsessive passion entails a rigid persistence in the activity that is out of the person's control. But is it the case? Is rigid persistence toward the passionate activity really at play in addictive problems such as pathological gambling? We have tested this hypothesis in one study (Vallerand et al., 2003, Study 4) comparing the two types of passion of regular casino gamblers (who played at least once a week) with those of people with gambling problems so severe that they ended up asking the Montreal Casino to bar them from entry. Clearly, these individuals do have important problems (93% of the self-exclusion sample displayed pathological gambling vs. 37% for the regular casino players). These are very high numbers as roughly only 2–4% of the general population experiences pathological gambling. As such, the self-exclusion gamblers should have stopped gambling a long time ago. And yet, they have rigidly persisted. The question is why?

Based on the above, it can be hypothesized that the two types of gamblers should hold different types of predominant passion. Specifically, they should strongly differ on obsessive passion but not necessarily on harmonious passion. The results indeed revealed that the self-exclusion gamblers reported significantly higher levels of obsessive passion than regular casino gamblers. No difference existed on harmonious passion. Results from a discriminant analysis further revealed that obsessive passion was able to correctly predict group membership in 80% of all cases. Furthermore, for the self-exclusion group, their obsessive passion was significantly higher than their harmonious passion. There were no differences between the two scales for the control group (regular gamblers). These last results were replicated in a recent study on the role of passion in the prevalence of gambling problems (Philippe & Vallerand, 2007). It would thus appear that obsessive (but not harmonious) passion lead gamblers to persist while they should not, thereby sending them on a path toward addiction to an activity that can have lethal effects on their life.

This general pattern of results over gambling problems was also found in the domain of problematic (addictive) Internet use. For instance, Wang and

Chu (2007) showed that the two types of passion were differentially related to problematic gaming in a sample of over 400 participants. Specifically, obsessive passion was positively related to problematic gaming, whereas harmonious passion was not. Lafrenière et al. (2009a) extended the Wang and Chu study by looking at both positive and negative outcomes (including problematic or excessive gaming) with a sample of 222 participants of massively multiplayer online games. These games are like video games with the difference that they are interactive, involving several other players. These players were highly involved as they had been playing for more than 2 years and were playing on average more than 22 h per week at the time of the study. Participants completed the Passion Scale and a variety of measures including those assessing positive and negative affect, problematic behaviors usually associated with excessive gaming (Tejeiro, & Morán, 2002), and eudaimonic well-being. A canonical correlation was performed on the data. Results revealed the presence of two significant correlations. The first one was predicted by obsessive passion and showed proof of mainly maladaptive outcomes (negative affect, problematic or addictive behaviors, inordinate number of hours played per week, and low eudaimonic well-being) but also some adaptive outcomes (positive affect). The second canonical correlation was predicted by harmonious passion and only involved adaptive outcomes (positive affect, the absence of negative affect and problematic behaviors, and high well-being). Of major importance for the present discussion are the findings that obsessive passion for online gaming was positively related to problematic behaviors such as getting irritable or restless when prevented from playing as a way to escape from problems. Harmonious passion was unrelated to such behaviors. Finally, it should be noted that Wang and Yang (2007) also found that having a predominant obsessive passion for online shopping puts one at greater risk of developing online shopping dependency than harmonious passion.

In sum, preliminary evidence reveals that obsessive passion may contribute to addictive behavior evidenced by pathological gambling, excessive online gaming, and online shopping dependency, whereas harmonious passion may not. Longitudinal research involving other types of well-known addictive activities (e.g., drugs, internet sex) is needed to replicate these findings and more firmly identify the nature of psychological processes involved in the obsessive passion–addictive behavior relation.

5.5. Passion and physical health

Passion may affect one's physical health in a number of ways. One of these is clearly positive. For instance, by leading individuals to regularly engage in physical activity, passion may positively contribute to their health. At the same time, passion can also lead to excess and people may engage in fitness behavior when they should not, thereby placing their health at risk.

Thus, failing to take into account changes in the situation or circumstances and engaging in risky behavior represents a first health hazard. For instance, take cycling as an example. In the spring, summer, and fall this activity can be a lot of fun and can promote one's health. However, the reality in the winter can be very different (at least in the Province of Quebec). The roads are icy and full of snow and they make cycling a very hazardous affair that may lead to falls and injuries. Clearly, it would be advisable not to cycle under such conditions. If our hypothesis on the rigid persistence induced by obsessive passion is correct, then obsessive passion should lead one to engage in risky behaviors such as winter cycling. On the other hand, if we are correct with respect to the flexible persistence of harmonious passion, then the latter should not lead to such a behavior. Indeed, with harmonious passion, people are more mindful of the changing situations and can then adapt accordingly. Thus, they should be able to refrain from cycling outside in winter.

We have tested these very hypotheses with cyclists (Vallerand et al., 2003, Study 3). Regular cyclists completed the Passion Scale in August with respect to cycling. Six months later, they were contacted again through e-mail to determine who was still cycling in February. Results showed that only 30% of participants were still cycling outside in winter. It was found that those persistent cyclists had reported higher levels of obsessive passion 6 months earlier than those who did not cycle in the winter. No differences were found with respect to harmonious passion. Results from a discriminant analysis further revealed that obsessive passion was able to correctly predict group membership in 79% of all cases. Thus, obsessive passion may potentially affect people's health by leading them to engage in certain risky activities that they should not (such as cycling under dangerous conditions). Such is not the case for harmonious passion.

Although informative, the above study (Vallerand et al., 2003, Study 3) did not show that those who cycled during the winter saw winter cycling as dangerous. They may be quite cautious and may even see such behavior as relatively safe. So, the question remains, does obsessive passion lead one to engage in behavior that they perceived as risky? A recent study with swing dancers suggests that it is indeed the case (Harvey & Vallerand, 2009). In this study, only obsessive passion was significantly associated with engaging in both safe and *dangerous* acrobatics (air steps). For harmonious passion there was only a tendency ($p < 0.11$) to be positively correlated with engaging in safe acrobatics. There was no relation with dangerous acrobatics. It would thus appear that obsessive (but not harmonious) passion predicts engaging in behavior perceived as dangerous and risky.

The above results suggest that obsessive passion can lead people to put themselves at risk of experiencing injuries when engaging in the passionate activity. Does obsessive passion represent a risk factor for injuries? This question has been recently addressed in a study by Stephan et al. (2009). In their study with competitive long-distance runners, the authors showed

that obsessive passion positively predicted perceived susceptibility to injury while controlling for a number of variables including the number of weekly training sessions and years of experience in running. Harmonious passion was negatively related to susceptibility to injury. Of additional interest, Stephan et al. reported that obsessive (but not harmonious) passion was positively related to the number of past injuries. Thus, it would appear that obsessive passion is a risk factor for sport injuries.

Research by Rip et al. (2006) with modern-jazz dance students went one step further and examined the passion–injury relation by distinguishing between acute and chronic injuries. Apparently, the important question with dancers is not whether or not they get injured, but rather how they respond once they do (Turner & Wainwright, 2003). Obsessive passion, as we have seen earlier, is associated with rigid persistence. Therefore, when injured, obsessive passion should lead people to continue dancing, thereby leading to chronic injuries. On the other hand, with harmonious passion, the person is in control of the activity, and thus, persistence is expected to be flexible as was seen in the cycling study. As such, the harmoniously passionate dancer can decide to stop dancing when injured if there is a risk of developing a chronic injury. In the study by Rip et al. (2006), participants ($n = 80$) completed the Passion Scale as well as questions pertaining to injuries incurred over the past year and how they typically act when injured (behavioral items). Results from partial correlations revealed that both types of passion were negatively related to acute injuries. This was expected as the more passionate the dancers, the more likely they are to dance, to keep fit, and thus to prevent acute injuries. The real test of our hypothesis deals with chronic injuries. Results revealed that obsessive passion was positively related to the number of weeks missed due to chronic injuries, whereas harmonious passion was unrelated to chronic injuries. These findings appear in Fig. 3.6. Furthermore, additional analyses with the behavioral items revealed that obsessive passion positively predicted ignoring the pain and having one's pride interfere with treatment. These latter two types of behavior are particularly troublesome because they lead dancers to neglect their physical condition and may lead to injury aggravation. Conversely, harmonious passion was positively related to seeking information on the injury and its treatment and being able to completely stop dancing to let the injury heal, but was negatively related to ignoring the pain and hiding an injury. Thus, the Rip et al. research suggests that obsessive passion is a risk factor for chronic injuries. Future research is needed in order to replicate these results and determine the role of harmonious and obsessive passion in objective acute and chronic injuries.

A final area where passion comes into play with respect to one's health pertains to situations where prolonged engagement in the passionate activity leads to health problems. Online gaming is such an activity. Indeed, people may engage in gaming activities for excessively long periods of time, leading

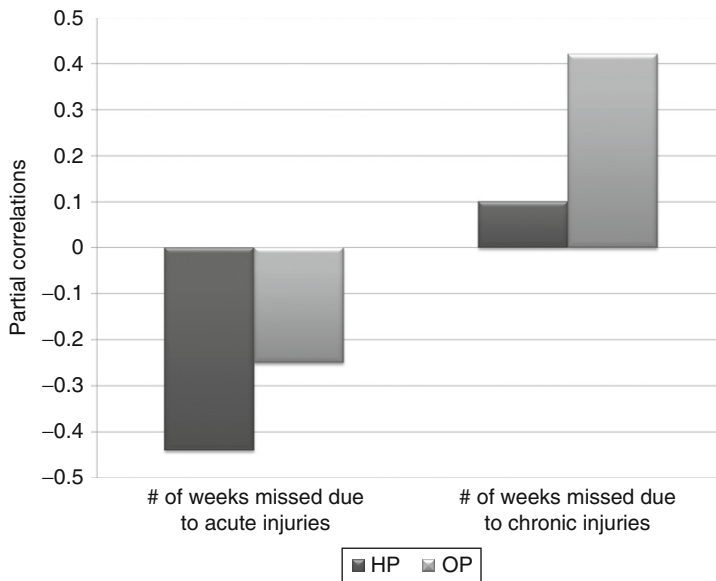


Figure 3.6 On the role of harmonious and obsessive passion in the prediction of acute and chronic injuries (partial correlations). Adapted from [Rip et al. \(2006\)](#).

them to disregard biological needs such as hunger, thirst, and sleep. Over time, such neglect takes its toll on physical health and people then experience health problems. Stories abound of people who played for days and suffered important health problems as a result (e.g., [Chuang, 2006](#)). Because of the rigid persistence it entails, obsessive passion should positively predict such problems. Conversely, because people with a harmonious passion remain in control of their activity, they should be able to stop when needed and thus prevent hurtful consequences on their health. Results from a recent research ([Lafrenière et al., 2009a](#)) on online gaming supported these hypotheses. Obsessive passion for gaming was found to be positively associated with negative physical symptoms (e.g., loss of appetite, sleep disorders, etc.), whereas harmonious passion was unrelated to such symptoms. In addition, in line with past research, harmonious passion was found to lead to some positive outcomes such as higher psychological well-being (i.e., higher life satisfaction, self-realization, and general positive affect) whereas obsessive passion was not.

In sum, harmonious and obsessive passion can lead to positive and negative effects on one's health, respectively, through the different mediating processes that are triggered, such as rigid persistence and engagement in risky behavior. Future research is needed to replicate the present findings with more objective measures of injuries and health such as medical records and informant reports.

5.6. Passion and performance

Over the years, much effort has been deployed to identify the nature of processes involved in expert performance (see [Ericsson, 1996](#); [Starkes & Ericsson, 2003](#)). Some authors have suggested that natural talent is one of the key elements (see [Gagné, 2007](#)). Although some “natural” talent is indeed necessary, it surely does not explain all because some top performers such as Bob Dylan and Michael Jordan initially failed at their craft. Indeed, Dylan (then known as Robert Zimmerman) was often booed off stage early in his career in his state of Minnesota and Jordan was cut from his varsity high-school basketball team when he first tried out for the team. Research with top-level athletes provides support for the claim that natural talent does not explain high levels of performance (see [Moran, 2009](#)). In fact, such research reveals that outstanding athletes *do not* have faster reaction times than the normal population on nonsport tasks! What they do have is a sport-specific cognitive (knowledge), rather than physical, advantage that has developed over time with practice in their respective sport. Other authors would like us to believe that special circumstances (or opportunities) are the key element responsible for the success of high performers ([Gladwell, 2008](#)). For instance, Bill Gates benefited from access to a personal computer in his high school, a rare feat at the time in the 1960s. However, other children also benefited from this computer in the same school and did not reach Gates’ level of expertise. Thus, special circumstances do not explain all.

So what is it that matters with respect to performance? Although it is hard to dispute that some talent is necessary to reach high levels of performance and that special circumstances may give one an edge on the competition, I suggest that passion for the activity is the missing ingredient. Indeed, if one is to engage in the activity for long hours over several years and sometimes a lifetime, one must love the activity dearly and have the desire to pursue engagement especially when times are rough. For instance, although they failed initially, Dylan and Jordan did not give up. Rather, they worked harder at their craft each day for long hours. Their passion was not a fleeting interest and it helped them overcome obstacles and eventually reach high levels of performance. And Gates? He is still involved in computers, outguessing the competition on the new technological trends to come, some 40 years after regularly sneaking out from home at night to work on the high-school computer until the early morning hours.

The above discussion on top performers was just anecdotal in nature. So, is there empirical evidence supporting the claim that passion is indeed involved in high-level performance? The results of a recent study ([Mageau et al., 2009a](#), Study 3) shed some light on this issue. In this study, we compared two groups of *passionate* musicians on harmonious and obsessive passion and the passion criteria discussed previously. A first group ($n = 70$) had become passionate after 4 months of their first music classes in their high

school, whereas the second ($n = 85$) were college students at a highly recognized Canadian University Faculty of Music. This latter group had on average 10 years of music experience and comprised musicians of national and international caliber. As such, this last group can be seen as a high-level performing group of musicians. If our hypothesis is correct, then, the high expert group should score higher on the various passion indices than the novice group. Results supported the hypothesis. The high-performance group scored significantly higher than the low performance group on harmonious and obsessive passion, as well as on three of the four passion criteria (activity valuation, time investment, and the number of weekly practice hours). It should be underscored, that based on our criteria, both groups displayed at least a moderate level of passion toward music (an average score of 4 and up on the passion criteria). It is simply that those who persisted for 10 years (or more) and who reached high levels of performance were much more passionate than the low-performance group. As an aside, it should be noted that there was no difference between the two groups on the fourth criterion item, *love* for music. This last result suggests that passion and intrinsic motivation are indeed different constructs. Obviously, this study was cross-sectional in nature and longitudinal research is needed to replicate the findings. Nevertheless, the results are in line with the position that passion is a necessary ingredient in high-level performance.

So, if passion is involved in performance, what is the process through which such effects take place? Research on expert performance reveals that high-level performers spend several years of considerable engagement in deliberate practice (i.e., engagement in the activity with clear goals of improving on certain task components), to reach excellence in their chosen field of expertise (see [Ericsson & Charness, 1994](#)). Although clinging to special circumstances as the major contributor to excellence, [Gladwell \(2008\)](#) nevertheless admits that deliberate practice is important in reaching excellence in one's field. And rightly so, as research is clear on this issue: to train to reach the Olympics and/or the professional levels takes a full 10 years of dedication and 10,000 h of deliberate practice ([Ericsson & Charness, 1994](#)). This amounts to 4 h a day, 6 days a week for 10 years. That is a lot of practice! [Vallerand et al. \(2007\)](#) proposed that passion is needed to go through such training regimens. Thus, it is hypothesized that the two types of passion (harmonious and obsessive) lead to engagement in deliberate practice that, in turn, leads to improved performance.

This first basic model was tested in a study with dramatic art performers ([Vallerand et al., 2007](#), Study 1). Male and female dramatic arts students enrolled in the best schools of the Province of Quebec completed scales assessing their passion as well as deliberate practice (based on [Ericsson & Charness, 1994](#)). Then, later, teachers independently rated the students' performance on a number of dimensions previously identified by teachers

and actors as key to a career in this field of excellence. A path analysis using structural equation modeling provided support for the basic model. Both types of passion led to engagement in deliberate practice that, in turn, led to objective performance. These findings were replicated in a study with college basketball players (Vallerand et al., 2008a, Study 1). It thus appears that both types of passion positively contribute to deliberate practice and thus, indirectly, to performance. These findings are in line with those of the Mageau et al. (2009a, Study 3) study reported previously. In this study, expert performers not only reported higher levels of harmonious and obsessive passion, but also indicated spending 10 times more hours weekly practicing their craft (21 vs. 2 h) than low-performance novice musicians. Also of interest is the finding that in the study with dramatic arts students, harmonious passion was positively and significantly related to life satisfaction, whereas obsessive passion was unrelated to it. This is in line with research discussed previously on the positive role of harmonious passion in psychological well-being.

The results of the two performance studies presented above established a direct relation between passion and deliberate practice, and an indirect relation between passion and performance (through deliberate practice). We conducted an additional study (Vallerand et al., 2008a, Study 2) in order to examine the psychological processes through which passion contributes to deliberate practice, and indirectly contributes to performance. We proposed that achievement goals should represent important mediators between passion and deliberate practice. Elliot and colleagues (Elliot, 1997; Elliot & Church, 1997; Elliot & Harackiewicz, 1996) have distinguished between three types of achievement goals: mastery goals (which focus on the development of personal competence and task mastery), performance-approach goals (which focus on the attainment of personal competence relative to others), and performance-avoidance goals (which focus on avoiding incompetence relative to others). Passion has been found to relate to affective and cognitive investment in an activity, thereby implying that the individual is committed to engaging in that activity in a competent manner. Harmonious passion, being an autonomous form of regulation is predicted to be positively related to mastery goals but not to performance goals of either type. On the other hand, obsessive passion, being a more pressured, internally controlling form of regulation is likely to lead the individual to feel compelled to seek any and all forms of success at the activity. As such, obsessive passion should be positively related to mastery and performance-approach goals, as well as to performance-avoidance goals.

A study with men and women water-polo and synchronized swimmers (including some who were part of the junior national teams) was conducted over an entire season to test the above model (Vallerand et al., 2008a, Study 2). At Time 1, individuals completed the Passion Scale, the Achievement

Goals Scale (see Elliot & Church, 1997), and scales assessing psychological well-being. At Time 2, they completed the Deliberate Practice Scale. Finally, at Time 3, coaches assessed players' performance over the entire season. A path analysis tested the proposed model. The results are illustrated in Fig. 3.7. As can be seen, harmonious passion positively predicted mastery goals that, in turn, led to deliberate practice that positively predicted objective performance. On the other hand, obsessive passion was positively related to all three goals. Although performance-approach goals did not predict any variables in the model, performance-avoidance goals negatively predicted performance. Finally, as in the Vallerand et al. (2007, Study 1) study with the dramatic arts performers, harmonious passion was positively associated with psychological well-being whereas obsessive passion was unrelated to it. This basic model was replicated in a study with students who had a passion toward studying psychology as their future profession and with objective exam scores in a psychology course as a measure of performance (Vallerand et al., 2007, Study 2) and in another study with national and world-class classical musicians (Bonneville-Roussy et al., in press). These last two studies underscore the fact that passion triggers a process

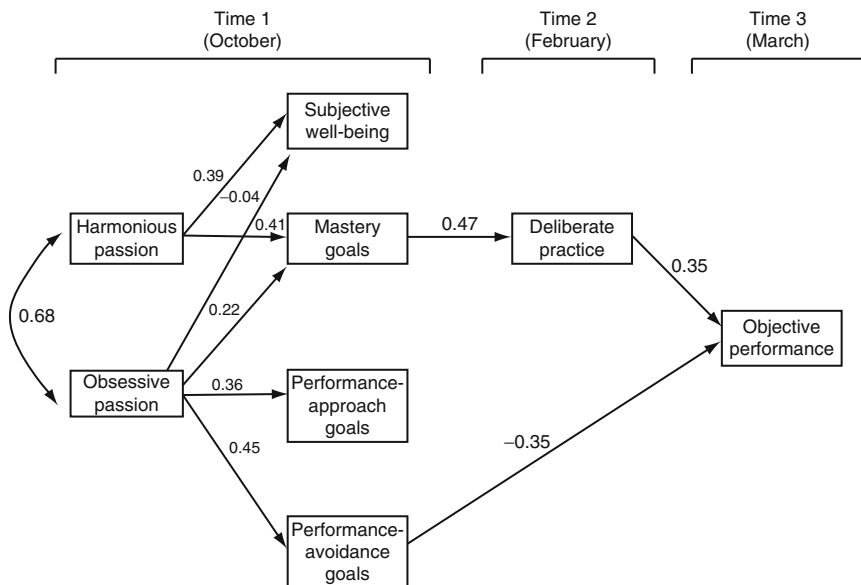


Figure 3.7 Results from the path analysis of the passion–performance model in sport. Reprinted from Vallerand et al. (2008a, Study 2) with permission. (Note: All coefficients were significant ($p < 0.05$), except the link between obsessive passion and subjective well-being). For sake of clarity, the disturbances and the covariances are not presented.

that eventually can affect actual objective performance at the highest levels. Furthermore, once again, harmonious (but not obsessive) passion positively predicted life satisfaction in both studies.

Overall, the above research on passion and performance suggests the existence of two roads leading to performance attainment. The first road originates from harmonious passion, and promotes an exclusive focus on trying to master the activity. This mastery focus leads the person to engage in activities specifically aimed at skill improvement, and such deliberate practice eventually leads to high levels of performance. Of additional interest is that this harmonious engagement process also facilitates psychological well-being. The second road leading to performance attainment emanates from obsessive passion. Such a road is more complex than the first, as it involves the adoption of both adaptive (mastery goals) and maladaptive (performance-avoidance) achievement goals. This second road to performance would thus appear to be less than optimal for the individual. Indeed, in addition to leading to mixed performance through the adoption of mastery and performance-avoidance goals, it also prevents people from enjoying themselves during activity engagement and does not facilitate psychological well-being. Thus, contrary to what is typically believed, an obsessively passionate engagement in the activity where performers focus almost exclusively on their activity at the expense of other life pursuits, and who end up suffering in the process, is not the only road to excellence. Therefore, one message from the present research is that one need not suffer psychologically in order to reach the pinnacle of success. One can be a high-level performer and lead a relatively balanced, happy, life at the same time, to the extent that harmonious passion underlies one's engagement in the field of excellence.



6. PASSION AND INTERPERSONAL, INTERGROUP, AND SOCIETAL OUTCOMES

Research presented so far has focused on intrapersonal outcomes. In this section, I focus on outcomes with implications for other people, and even for society as a whole. Such research addresses the role of passion in interpersonal, intergroup, and societal outcomes.

6.1. Passion and quality of interpersonal relationships

Csikszentmihalyi and his colleagues (1993) in their book on talented teenagers noted that individuals who spend a lot of time developing their talents tend to spend more time alone and less time with peers, and score higher on social introversion. Thus, an important question is, "Does passion affect the

quality of one's relationships?" A complete answer to this question must take into consideration the object (or activity) of one's passion, the type of passion underlying one's engagement in the passionate activity, as well as the context within which one's relationships take place. Below, we consider three contexts where passion operates.

A first context where one's passion can affect the quality of relationships takes place within the purview of the passionate activity. It would appear reasonable to suggest that being passionate for an activity may influence the quality of relationships that one develops in this area. Indeed, passionate individuals are typically seen as highly engaging and as such should be highly popular and able to make friends easily. But if it is the case, what is the process through which they make friends? Further, does it make a difference if one is harmoniously or obsessively passionate? It was seen earlier that one's positive affective experiences mediate the impact of passion on psychological well-being (Rousseau & Vallerand, 2008). In line with the work of Fredrickson (2001), the DMP posits that the experience of situational positive affect is also conducive to high quality of relationships. This is so because positive affect opens up people's thought-action repertoires and self, leading one to experience the world more fully, thereby facilitating smiles, positive sharing of the activity, connection, and openness toward others that are conducive to positive relationships (see Waugh & Fredrickson, 2006). Because harmonious passion leads one to experience positive affect during engagement in the passionate activity, it would be hypothesized that it should therefore indirectly lead to high-quality relationships within the passionate activity. Conversely, because it is typically unrelated to positive affect and at times correlated with negative affect, obsessive passion would be expected to negatively affect the quality of relationships that develop within the purview of the passionate activity.

Initial research conducted on this issue in a field setting (Lafrenière et al., 2008a, Study 1), revealed that athletes' harmonious passion toward their sport was positively related, whereas obsessive passion was either unrelated or negatively related, to various indices of relationship satisfaction with their coach. Subsequent research (Lafrenière et al., 2008a, Study 2) with coaches confirmed the role of positive affect generally experienced by coaches while coaching, as a mediator of the relation between harmonious passion toward coaching and perceived relationship quality with their players. Obsessive passion was unrelated to affect or relationship quality.

Although this research (i.e., Lafrenière et al., 2008a,b) provides preliminary support for the "Harmonious Passion→Positive Affect→Interpersonal Relationship" hypothesized sequence, it nevertheless remains that such research showed some limitations. First, data relied exclusively on self-reports. Second, because coaches and athletes knew each other at the time they completed the questionnaire, it is possible that quality of relationship influenced passion, rather than the other way around. Third, these studies all

took place at one point in time, thereby precluding looking at the *development* of relationships as such. Finally, these studies did not identify a potential mediator of the impact of obsessive passion on relationship quality. Recent research conducted in a variety of settings, including work and sports, has addressed these issues (Philippe et al., *in press-a*). For instance, in one study dealing with work teams in an educational setting (Philippe et al., *in press-a*, Study 4), 185 students who did not know each other at the beginning of the term completed the Passion Scale toward their studies in management. Then, at the end of the term, they indicated the positive (general) and negative emotions experienced within their work teams over the semester and reported on the positive (connectedness) and negative (seclusion) interpersonal aspects that they had experienced during the term. Furthermore, participants were asked to rate their perceptions of each of their teammates' quality of interpersonal relationships developed with the other people in the work team over the semester on positive and negative interpersonal dimensions. It was hypothesized that harmonious passion would positively predict positive affect, but negatively predict negative affect, experienced over the semester. Conversely, obsessive passion was expected to only positively predict negative affect. In turn, positive and negative affects experienced in the work team over the semester were hypothesized to predict the positive and negative relationship assessments, respectively. Results from structural equation modeling analyses provided support for the hypotheses. These findings were also obtained in another study conducted in summer basketball camps where players did not know each other at the beginning of the camps (Philippe et al., *in press-a*, Study 3).

Overall, the findings from the Philippe et al. (*in press-a*) studies are important for at least three reasons. First, they show that passion does affect the quality of relationships that people develop in the passionate activity, from day 1. Second, these studies also reveal the nature of the processes, namely positive and negative affect, through which harmonious and obsessive passion differentially affect relationships, respectively. Finally, these affective processes are not only experienced by the passionate performers, but are also being picked up by the people with whom they engage in the activity. In other terms, the impact of passion on relationship quality does not simply take place in the head of the passionate individual but rather fully extends to other people.

A second relevant context where passion affects relationships takes place outside the purview of the passionate activity. Specifically, it pertains to the role of passion for a given activity (e.g., work) on the quality of relationships outside of the passionate activity (e.g., relationship with one's spouse). The DMP posits that having an obsessive passion toward an activity should lead to conflict with other life activities because with obsessive passion, one cannot let go of the passionate activity, whereas this should not be the case for harmonious passion. One will recall that results from the Vallerand et al.

(2003, Study 1) provided preliminary evidence for this hypothesis on the role of obsessive (but not harmonious) passion in conflict between the passionate activity and other life domains. This basic hypothesis has important implications for the quality of interpersonal relationships that people experience outside the realm of the passionate activity. For instance, people with a passion for using the Internet may surf the net at night on a regular basis. If obsessive passion underlies such activity engagement, people may forget what time it is, even ignoring their spouse's call to come to bed for the night. If done on a repeated basis, such behavior may have severe detrimental effects on a couple's relationship. Such should not be the case with harmonious passion because the person can let go of the passionate activity when needed and thus will not experience conflict between pursuing engagement in the passionate activity and spending time with the loved one. Séguin-Lévesque et al. (2003) have specifically addressed this very issue with regular Internet users who were in a relationship. The results showed that controlling for the number of weekly hours that people engaged in the Internet, obsessive passion for the Internet was positively related to conflict with one's spouse, whereas harmonious passion was unrelated to it. Thus, it is not the number of hours devoted to the passionate activity that is the major problem, but rather when one engages in this activity and to what extent such engagement conflicts with one's love life.

A subsequent research with 150 English soccer fans (Vallerand et al., 2008b, Study 3) tested more directly the hypothesized sequence. English soccer fans were contacted at the soccer stadium of a large metropolitan city and asked to complete a questionnaire assessing passion toward soccer, perceptions of conflict between soccer and the loved one (adapted from Séguin-Lévesque et al., 2003), and the satisfaction with one's intimate relationship using the Perceived Relationship Quality Components Inventory (Fletcher et al., 2000). Structural equation modeling analyses were conducted. The results appear in Fig. 3.8. As can be seen, the results

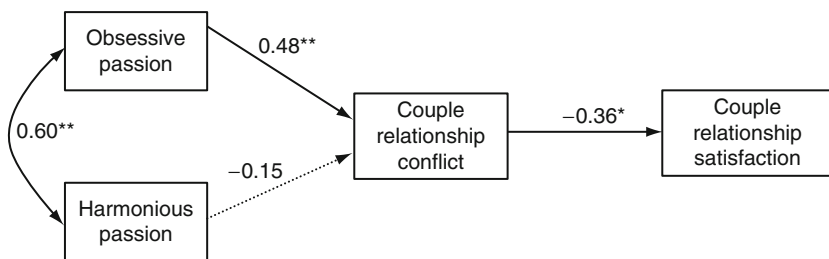


Figure 3.8 Results from the Passion–Conflict–Couple Relationship satisfaction model. Reprinted from Vallerand et al. (2008b, Study 3) with permission. For sake of clarity, the disturbances and the covariances are not presented.

revealed that an obsessive passion for one's soccer team predicted conflict between soccer and the loved one. Conflict, in turn, negatively predicted satisfaction with the relationship. Harmonious passion was unrelated to these variables. Of additional interest, individuals who were single were asked to indicate if their passion for soccer was responsible for being single. There was a strong positive correlation between obsessive passion and this measure, but a negative correlation for harmonious passion.

Findings from the two studies discussed above reveal that having an obsessive passion for a given activity leads one to experience conflict between that activity and one's spouse (or loved one), thereby affecting the quality of this relationship. Harmonious passion toward the activity is unrelated to conflict and relationship satisfaction. Future research is needed to explore this sequence with other types of relationships (e.g., friends, parents, siblings, etc.) as well as identify the processes through which harmonious passion may positively contribute to these relationships.

A third and last area where passion can affect relationships pertains to the impact one's passion for the loved one can have on the quality of the romantic relationship. Thus, here the passion is for another person. In line with [Aron et al. \(1992\)](#), who have shown that one can internalize the loved one in the self, and [Hatfield and Walster \(1978\)](#), who posit the existence of passionate love, the DMP also proposes that one can be passionate for the loved one. Contrary to these conceptual approaches, however, the DMP posits that there are two (rather than one) types of internalization processes (an autonomous and a controlled one) leading to two types of passion (harmonious and obsessive) for the loved one. Furthermore, in line with findings reviewed previously ([Philippe et al., in press-a](#)), it is predicted that our own passion for the loved one will have an influence on both ourselves and our partner. Thus, harmonious passion should lead to more positive personal and relational outcomes than obsessive passion both for ourselves and our partner.

Recently, [Ratelle et al. \(2009\)](#) have conducted a series of three studies to test the applicability of the DMP to intimate relationships. The purpose of Study 1 was to basically validate the construct of passion to romantic relationships. In this study ([Ratelle et al., 2009](#), Study 1), participants who were in a romantic relationship completed a modified version of the Passion Scale for relationships. For instance, a harmonious passion item was: "My relationship with my partner allows me to live varied experiences," whereas an obsessive passion item was "I almost have obsessive feelings for my partner." Results of an exploratory factor analysis provided support for the bifactorial validity of the scale and the reliability of the scale was high (α s were over 0.80 for both subscales). Furthermore, a subset of participants completed the Passion Scale twice over a 6-week period. Correlations supported the moderately high temporal stability of the scale ($r = 0.63$ for harmonious passion; $r = 0.77$ for obsessive passion), suggesting that

while passion is relatively stable, there is nevertheless room for some changes and fluctuation. Participants also completed scales assessing passionate love from the theoretical perspectives of [Hatfield and Sprecher \(1986\)](#) and [Sternberg \(1997\)](#) (these authors posit the existence of only one type of passion), as well as the [Aron et al. \(1992\)](#) scale to assess the level of internalization of the loved one in the self (the Inclusion of Other in the Self-scale).

Results revealed that both types of passion correlated equally high with all scales thereby supporting the hypotheses that both harmonious and obsessive passions are perceived by individuals as a “passion” toward the loved one and that the latter is seen as highly internalized in the self. In line with the initial study of [Vallerand et al. \(2003, Study 1\)](#), well-being was assessed under three different conditions: when one spends time with the partner, after one has spent some time with him or her, and when the partner is unavailable. Well-being was measured through positive emotions (the PANAS; [Watson et al., 1988](#)) and subjective vitality ([Ryan & Frederick, 1997](#)). The results replicated those of the [Vallerand et al. \(2003, Study 1\)](#). Specifically, in the first two conditions, harmonious passion was strongly and positively associated with well-being whereas obsessive passion was not. In the third condition (when the partner was unavailable and thus the person could not spend time with him or her), harmonious passion predicted higher feelings of vitality but not positive emotions, whereas obsessive passion predicted both variables negatively. Furthermore, in line with research from [Vallerand et al. \(2003, Study 1\)](#), obsessive passion also strongly predicted not being able to concentrate on other activities and feeling guilty when one’s partner was unavailable, whereas harmonious passion was negatively associated with guilt but unrelated to concentration problems.

The above results are important as they show the validity of the scale and the constructs of harmonious and obsessive passion for the loved one. Furthermore, results largely replicated the results from [Vallerand et al. \(2003, Study 1\)](#) with respect to the cognitive and affective intrapersonal consequences of being harmoniously or obsessively passionate toward one’s partner. An important issue, however, is that these results do not address the issue of the role of passion in the quality of one’s relationship with the partner. Does the type of passion matter? In [Ratelle et al. \(2009, Study 1\)](#), participants also completed the [Spanier \(1976\)](#) Dyadic Adjustment Scale. Results revealed that having a predominant harmonious passion for the loved one positively predicted all four subscales (i.e., satisfaction with the relationship, cohesion, consensus, and affective expression), as well as the total score, whereas obsessive passion was either slightly negatively related or unrelated to these various indices. These results were replicated in a second study ([Ratelle et al., 2009, Study 2](#)) with some nuances using a different instrument, the Perceived Relationship Quality Components Inventory ([Fletcher et al., 2000](#)). Harmonious passion was strongly and

positively related to all relationship quality dimensions. On the other hand, obsessive passion was positively related to commitment and love, negatively related to trust, and unrelated to satisfaction, intimacy, and sexual passion.

What the results of Studies 1 and 2 suggest is that harmonious passion does contribute positively to how people experience their relationship, whereas obsessive passion seems to lead people to commit and persist in a relationship where they love their partner but seem to receive little rewards from the relationship in return. Rigid persistence seems at work once again with obsessive passion, but this time with respect to interpersonal relationships.

In the final study (Ratelle et al., 2009, Study 3), we delved into the interpersonal issue more deeply, and attempted to answer the question “Does one’s passion influence the relationship quality as experienced by the partner?” To this end, both members of 116 heterosexual couples completed the Passion Scale toward the loved one, as well as the Perceived Relationship Quality Components Inventory (Fletcher et al., 2000). Results from hierarchical regression analyses involving the passion of both partners revealed that the passion of one partner made a significant contribution to the level of satisfaction toward the relationship reported by the other partner. For instance, controlling for women’s own harmonious and obsessive passion, men’s harmonious passion positively predicted women’s general satisfaction with the relationship. Even better, men’s harmonious passion proved to be a better positive predictor of women’s satisfaction with their sex life than women’s own harmonious passion! Men’s obsessive passion for the loved one was a significant negative predictor of women’s satisfaction with their sex life. These findings were also obtained with men’s relationship satisfaction, although the prediction was not as strong. It can be noted that there was no support for the matching of passion types among partners of a given couple (i.e., the number of partners who were both obsessively or harmoniously passionate was not greater than the number of those who were mismatched). Of additional interest, the couples where both partners had an obsessive passion had the lowest levels of relationship quality across all indices.

Overall, these findings suggest that having a balanced harmonious passion toward the loved one can positively affect not only the quality of the relationship as we experience it, but also as experienced by our partner. The opposite is also true for obsessive passion. As indicated above when discussing the interpersonal effects of passion for an activity on the quality of the relationships that we develop within that activity (e.g., Lafrenière et al., 2008a; Philippe et al., *in press-a*), the behavior of harmoniously and obsessively passionate individuals is picked up by their partner and influences the satisfaction with the relationship of both partners. Future research focusing on identifying such behaviors and clarifying their role in relationship quality, length of the relationship, and breakups would appear important from both conceptual and applied perspectives.

6.2. Passion and intergroup outcomes

International sport events are a fascinating area to study from the fans' perspective. Perhaps because passionate fans have internalized both the sport and their country, activity valuation is very high. Soccer fans, for instance, display high levels of support for their national team, ranging from flag waving, to singing national anthems, and even to have one's body painted in their country's colors. Such sport events are often the display of pride in one's team achievement as well as frustration after defeat. They also showcase much intergroup behavior as these games are much more than games. Indeed, Canadian hockey fans old enough to have witnessed the 1972 Canada-former USSR hockey series will remember that series as more than just hockey games. As such, these athletic events represented a confrontation of two countries and in fact, two systems, a democratic and a communist one (at the time) at the height of the cold war.

It is thus not surprising that such confrontations can lead to much antagonistic behavior (Stott et al., 2001). For instance, it is well documented that fans have hurt and even killed players (and even referees) perceived as responsible for their team's loss and violent attacks against fans from the opposing team occur with alarming regularity. Why would fans engage in such behavior? Of course, frustration (e.g., [Dollard & Miller, 1941](#)) following a loss provides one answer. However, frustration does not explain all as people can engage in violent behavior even following team victory. For example, fans of the winning team can celebrate their team victory in the street peacefully or they can mock fans from the losing team, thereby triggering escalation and violence between the two groups of fans. What are the psychological processes underlying such diametrically opposed behavior following team victory?

It is hypothesized that the type of passion that one holds and the emotions that it triggers can help explain these different behaviors. Two relevant emotions are pride and hate. Pride is closely linked to one's identity. Therefore, it should lead one to want to express this emotion publicly, such as peacefully celebrating especially following a win from one's team. On the other hand, hate is a negative emotion specifically oriented at someone. It can lead to outward behavior aimed at someone, such as mocking other people, like fans from the losing team. It is expected that both harmonious and obsessive passion would be positively related to the emotion of pride, especially after success, because for both types of passion the team one is rooting for is part of identity. On the other hand, the hatred experienced toward opponents should be differentially predicted by the two types of passion. Because harmonious passion takes roots in the authentic integrating self ([Deci & Ryan, 2000](#); [Hodgins & Kneee, 2002](#)), it should lead the person's identity to be secured and thus, the fans of the other team should not be perceived as obstacles or enemies, but rather as mere

opponents. Therefore, harmonious passion should not lead to the experience of hate toward supporters of other teams. Conversely, because obsessive passion originates from ego-invested self-structures (Hodgins & Knee, 2002), it may lead to the perception that fans of other teams are obstacles in the way of the team's victory or even as a symbolic threat to the self (Steele, 1988). Thus, obsessive passion would be expected to lead to the experience of hate toward opposing teams. In turn, the emotions of pride and hate should have different effects on the two types of behavior discussed previously, namely celebrating peacefully or mocking fans of the losing team. Specifically, hating supporters of other teams should primarily lead one to go in the street to make fun of them or mock them (or worse!), whereas the emotion of pride is expected to primarily lead to celebrating in the streets peacefully.³

We have recently conducted research to explore these issues (Vallerand et al., 2008b, Study 2). In this study, conducted in Montreal just a few hours before the start of the 2006 World Soccer Cup Finals, we asked fans of the two finalist countries (France and Italy) to complete a questionnaire assessing their passion for soccer, various emotions experienced during the tournament up to that point, including those of pride and hate toward the other teams they faced. Finally, we also asked them the extent to which they engaged in peaceful celebration and in mocking the other team's fans following team victory during the tournament. Because both teams had won all their games up to the finals, this study allowed us to provide some answers to the question posed above with respect to acceptable and unacceptable behavior following team victory. Results from structural equation modeling provided support for the hypothesized model. Specifically, both types of passion predicted the emotion of pride that, in turn, predicted peacefully celebrating team victory. However, as expected, only obsessive passion predicted the emotion of hate that, in turn, was found to lead to mocking fans from the losing team.

In sum, it appears that passion matters as pertains to intergroup behavior. Specifically, the present research supported the view from the DMP that harmonious and obsessive passions predict different emotions that in turn lead to different behaviors (including some that can lead to violence) toward fans of other teams. Future research is needed on this issue because it may lead to an increased understanding of some of the roots of hooliganism (e.g., Stott et al., 2001). Furthermore, additional research is needed on the role of passion in intergroup behavior that takes place in other contexts.

³ It should be noted that during the World Soccer Cup, including that of 2006, certain streets are closed in Montreal so that soccer fans can celebrate following games.

6.3. Passion for a cause: Seeking societal changes

For a number of people, the passionate activity they engage in is related to a cause or an aspiration that transcends the self and has implications for society. Some causes are more local, such as raising money to ensure proper computer equipment in one's high school, whereas others are more global such as saving the environment (or the planet) or reinstating democracy in one's country, such as in Iran in 2009. Some of these causes may translate into important societal changes, such as the fall of the Berlin wall in the late 1980s, whereas others may not, or at least not to the same extent, like the Tiananmen Square massacre in China in 1989. Irrespective of the type of cause, working effectively toward achieving a cause would appear to result at least from two major determinants: having a vision and having the necessary passion to achieve it. Indeed, to make a vision happen, it would appear that one needs to be passionate in order to invest time and energy on a long-term basis, sometimes for a lifetime.

But is it the case? Is passion necessary to achieve one's vision and to make the cause a successful one? We have recently started to address these issues. For instance, [Vallerand et al. \(2009, Study 1\)](#) had prominent contributors to the Quebec society and regular workers complete the Passion Scale. Each of the Quebec society contributors ($N = 100$) had been selected by the Province most influential newspaper ("La Presse") as personality of the week for their significant contribution to society, typically through marshalling a cause. We contacted those who had been selected as personality of the week over the past 10 years in one of many areas (science, arts, business, sports, etc.) and asked them to complete a questionnaire that contained the Passion Scale for their cause. Regular workers ($N = 206$) completed the Passion Scale for their work on a commuter train on their way back home after work. A comparison between the two groups could lead to a better understanding of the variables that distinguish those who make an important societal contribution from those whose contribution is less important. In particular, does passion characterize those who make a widely recognized societal contribution? And if so, which type of passion seems more important for those significant societal contributors. The results from a MANOVA provided an affirmative answer to the first question. First, the Quebec society contributors reported higher levels of passion (the passion criteria) than the regular workers. In fact, using the regular criteria (a mean of 4 on the four passion criteria) showed that 100% of the society contributors and 70% of the regular workers reported at least a moderate level of passion toward their work. However, if one takes a higher criterion denoting a high level of passion (a mean of 5 on the passion criteria, as used in the [Philippe et al., 2009b](#) study), then 96% of the society contributors were highly passionate, whereas this was the case for only 33% of the regular workers. Irrespective of the criterion that is selected, these differences are

highly significant. In addition, the prominent Quebec society contributors had higher levels of both harmonious and obsessive passion and worked longer hours each week than the regular workers (9 h more per week, on average). However, it should be noted that these group differences on the passion variables held up even controlling for the number of work hours. Thus, it is not the number of hours worked that is the crucial difference between these two groups, but rather if individuals are passionate or not.

Although the above results reveal that people recognized for their significant contribution to society are more passionate than those whose contribution is less important, these findings do not provide information as to which type of passion toward the cause is more likely to lead the most to positive societal outcomes. When people aim at achieving a cause, they typically try to produce changes in other people, or at least convince them to support their position. To do so, they may engage in a variety of behaviors, including some more “mainstream” and some less so. For instance, if one is working for an environmental agency that promotes the preservation of the environment, he or she may try to do so in a number of ways. One may engage in mainstream behaviors such as encouraging people to attend public lectures, hand in useful information, and so on. However, one may also engage in more extreme behaviors such as using violence against people and industries that do not respect the environment. It would appear that to provide information and to educate people is a more positive means to produce societal changes than using extreme behaviors. Though some may disagree, it would even appear that extreme and violent behaviors may hurt the cause more than anything else by leading people to rebel against it, or at least not to support it.

So which of harmonious or obsessive passion is more likely to lead to the use of more extreme means to achieve the cause to make it happen? Based on the findings presented in this chapter so far, obsessive passion would be expected to lead people to use any means possible (mainstream and or extreme behavior) in order to achieve the cause. Indeed, with obsessive passion the cause may be so important that it may take over individuals and lead them to engage in any kind of behaviors, including extreme ones, to ensure that the cause is attained. Such is not the case for harmonious passion because achieving the cause should remain under the person’s control and people would not adhere to behaviors that would conflict with other aspects of their self (e.g., values). Therefore, one would be inclined to predict that harmonious passion would be more likely to lead to the use of more mainstream means in line with their values and not to use extreme means to achieve the cause.

A recent study by [Gousse-Lessard et al. \(2009, Study 1\)](#) with over 100 environmentalist workers and volunteers ($M = 32.3$ years) tested the above hypotheses. In this study, participants who had been committed to the environmental cause for close to 8 years, on average, completed the Passion

Scale as well as a scale asking to what extent they perceived a variety of behaviors as acceptable to achieve the cause. Some of these behaviors were mainstream whereas others were clearly extreme (as determined by a pilot study with environmentalist experts). An example of a mainstream behavior was “participating in discussion groups to persuade people of the importance of the environment,” whereas an extreme behavior was “physically attack a polluting factory’s representative.” Results of partial correlations between each type of passion and the two types of behavior are reported in Fig. 3.9. It can be seen that harmonious passion toward the environment was positively related only to mainstream behaviors. Conversely, obsessive passion was positively related to both mainstream and extreme behaviors. Presumably when obsessive passion is operative, failure to achieve the cause is not an option, the ends justify the means, and engaging in all kinds of behaviors, including extreme ones to achieve their goal, becomes acceptable. These findings were replicated in a second study (Gousse-Lessard et al., 2009, Study 2) this time using a measure of behavioral intentions rather than perceived acceptability in a real-life situation. Finally, a study by Rip and Vallerand (2007) with people working toward a political cause yielded similar findings.

Overall, results from the above research suggest that in the long run, harmonious passion may lead to the most desirable forms of behavior

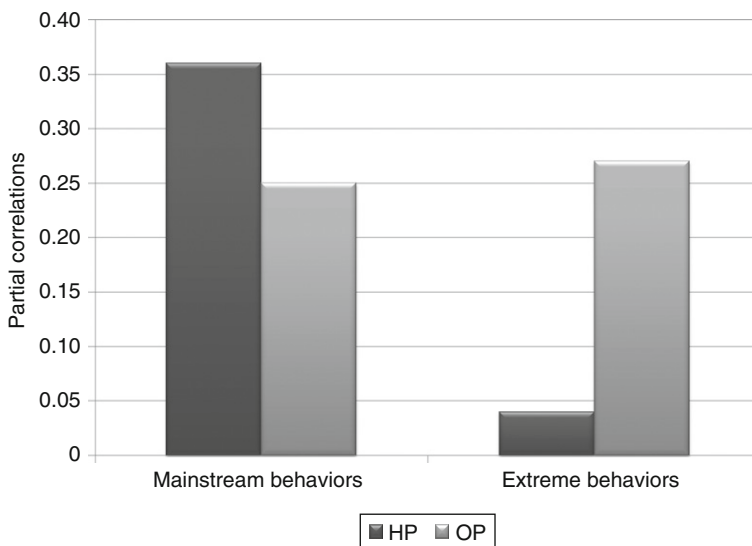


Figure 3.9 Partial correlations between harmonious and obsessive passions for the environment and mainstream and extreme environmental behaviors (Gousse-Lessard et al., 2009, Study 1).

toward achieving the cause and eventually best serving the cause. Although it may help the cause to some extent by leading to the adoption of effective and mainstream behaviors, obsessive passion may at the same time hurt the cause by promoting the use of extreme behaviors. Future research on these issues is important in order to delineate the nature of the mediators of the differential impact of harmonious and obsessive passion on extreme form of behaviors that may work against the very cause that one is trying to promote.

In the last two sections, I have reviewed research focusing on the outcomes of passion. It was seen that passion matters with respect to a variety of consequences. [Table 3.2](#) summarizes the relationship between harmonious and obsessive passion on the one hand, and outcomes on the other. It can be seen that, overall, harmonious passion leads to positive outcomes and is unrelated or negatively related to negative outcomes. Conversely, obsessive passion is typically positively related to negative outcomes and unrelated to positive consequences, although there are some exceptions such as certain types of positive affect (self-related affect and high-activation positive affect), performance, and societal behavior.



7. INTEGRATIVE RESEARCH

In previous sections, I reviewed research on the determinants and outcomes of passion. In the present section, I briefly review integrative research that has incorporated both the determinants and the outcomes of passion into a coherent “Determinants→Passion→Outcomes” sequence. In addition, whenever possible the mediators of the passion–outcomes relation are presented.

7.1. Social determinants, passion, and outcomes

One important question often asked in organizational settings deals with how best to promote high commitment toward the organization’s goals and values (affective commitment) and not simply being committed for lack of alternatives or costs associated with leaving the organization (continuous commitment). I propose that creating the social setting necessary for harmonious passion to thrive and flourish should lead to an affective commitment being displayed by employees. Research on the social determinants of passion ([Houlfort et al., 2009a](#)) reveals that to the extent that there is a prevalent clan organizational culture and that one’s supervisor displays a transformational leadership style, then harmonious passion is facilitated. On the other hand, transactional leadership and the market culture positively predict obsessive passion. In [Houlfort et al. \(2009a, Study 2\)](#), the type of

Table 3.2 Passion and outcomes: A summary

	Harmonious passion	Obsessive passion
1. Cognitive		
• Conflict (intrapersonal)	0	+
• Concentration (on task)	+	0
• Concentration (other tasks)	+	—
• Rumination	0	+
• Flow	+	0
• Decision making	+	—
2. Affect		
On task affect		
• Moderate positive affect (e.g., happy)	+	0/+
• High positive affect (e.g., excited)	+	+
• Self-related positive affect (e.g., proud)	+	+
• Negative affect	0/—	+
After the task		
• Positive affect	+	0
• Negative affect	0	+
When preventing from engaging in the activity		
• Moderate positive affect	0/+	—
• Negative affect	0	+
3. Psychological well-being	+	0/—
4. Addictive behaviors	0	+
5. Physical health		
• Injury susceptibility	0	+
• Acute injury	—	—
• Chronic injury	0	+
6. Performance		
• Indirectly through deliberate practice	+	+
• Indirectly through goals	+	+/0/—
7. Interpersonal relationships		
• Conflict (interpersonal)	0	+
• Quality of interpersonal relationships	+	0/—
8. Intergroup relations		
• Through positive affect (positive behaviors)	+	+
• Through negative affect (negative behaviors)	0	+

Table 3.2 (continued)

	Harmonious passion	Obsessive passion
9. Societal outcomes		
• Positive (mainstream behaviors)	+	+
• Negative (extreme/violent behaviors)	0	+

Note. +, Positively related; 0, Unrelated; –, Negatively related.

culture (clan vs. market), the manager’s leadership style (transformational vs. transactional), and the two types of commitment were assessed, and a model incorporating determinants, passion, and outcomes was tested. That model posited that the determinants (culture and leadership) would predict the two types of passion as discussed above. Furthermore, the model posited that harmonious passion should positively predict affective commitment but negatively predict continuous commitment. Obsessive passion, on the other hand, was not expected to predict commitment. Results from a structural equation modeling supported the hypothesized model.

Another important social determinant of passion previously discussed is autonomy support (or promoting choice and self-initiation of another person’s behavior). Research reveals that autonomy support from people in a supervisory position (e.g., teachers, coaches, managers) not only promotes the development of passion (Mageau et al., 2009b, Study 3) but also helps sustain harmonious passion once it has been developed (Mageau et al., 2009, Studies 1 and 2). A recent study by Bonneville-Roussy and Vallerand (2009) sought to replicate those findings and to further test whether harmonious passion would also predict intentions to pursue one’s involvement in music. A total of 150 musical students enrolled in international summer schools, completed scales assessing the two types of passion for music, perceived autonomy support from their teachers, and intentions to pursue their music involvement in years to come. Results from structural equation modeling analyses revealed that autonomy support from music teachers positively predicted harmonious passion for music that, in turn, positively predicted future intentions to pursue playing their musical instrument. Obsessive passion was unrelated to autonomy support or to intentions. Thus, these results provided support for the proposed sequence.

7.2. Personal determinants, passion, and outcomes

What are some of the personal factors likely to trigger the “passion–outcomes” relation? Research by Vallerand et al. (2006, Study 1) reveals that having an autonomous versus controlled personality represents such a

factor. Specifically, to the extent that people highly value an enjoyable activity, those with an autonomous personality orientation are more likely to develop and maintain a harmonious passion. On the other hand, a controlled personality orientation is more conducive to obsessive passion. In a subsequent study, [Vallerand et al. \(2006, Study 3\)](#) tested the same sequence of personal determinants but also included subjective well-being at Time 2 as an outcome. It was predicted that only harmonious passion would predict well-being at Time 2. Elite athletes completed questionnaires assessing activity (sport) valuation, personality orientations, and passion at Time 1 and well-being at Time 2 (4 months later). The hypothesized model posited that the more athletes value their sport and display an autonomous personality, the more harmonious their passion would become. On the other hand, highly valuing their sport and holding a controlled personality, should lead athletes to develop an obsessive passion for their sport. In turn, it was hypothesized that harmonious passion would lead to higher levels of well-being in sport, whereas obsessive passion was expected to be unrelated to well-being. Results of structural equation modeling analyses provided support for the model.

Intrinsic versus extrinsic values represent another personal factors that should trigger the “Passion→Outcomes” sequence. It will be recalled that in research with collectors already discussed in the section on personal determinants ([Grenier et al., 2009, Study 2](#)), intrinsic values predicted harmonious passion, whereas obsessive passion was predicted by extrinsic values. This is because the intrinsic values are rooted in the authentic self, and as such allow one to orient his or her harmonious passion in line with true interests, aspirations, and values. On the other hand, because they reflect controlled and ego-invested structures, extrinsic values facilitate obsessive passion with the various contingencies that it entails. In this study, we had also measured some adaptive and less adaptive outcomes that one can derive from one’s engagement in collecting. For example, positive outcomes included learning new things through the collection and collecting making one’s life more positive. Examples of the less adaptive outcomes included feeling depressed when one is unable to obtain a special piece for the collection and having spent more money than one wanted on a given piece. Grenier et al. conducted structural equation modeling analyses to test the model that posits that intrinsic values lead to harmonious passion that predicts adaptive outcomes whereas extrinsic values predict obsessive passion that, in turn, leads to less adaptive outcomes. Results largely supported the model with one exception. Although obsessive passion strongly predicted maladaptive outcomes, it also slightly predicted adaptive outcomes. [Figure 3.10](#) illustrates the results.

Research discussed so far in this section has focused on how passion for a personal activity (e.g., collecting stamps) affects outcomes. Thus, one may wonder whether the integrative sequence also works with respect to

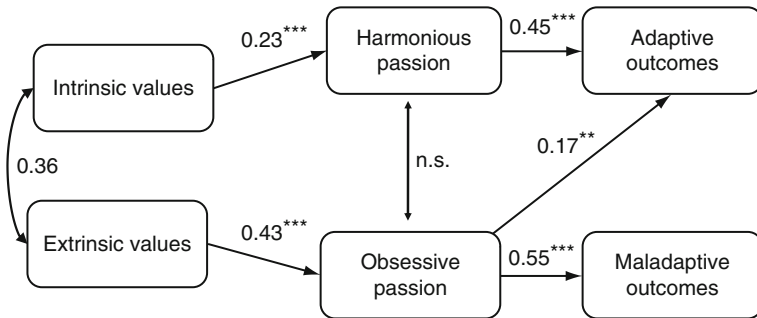


Figure 3.10 Results from the structural equation modeling analyses on the integrative model of intrinsic and extrinsic values, passion for collecting, and outcomes (Grenier et al., 2009). For sake of clarity, the disturbances are not presented.

interpersonal activities. To address this issue, we have conducted research on integrative models in the close relationship area. An interesting issue with respect to romantic relationships is that most people seem to change when they are in a relationship. Aron et al. (2005) posit that such changes are due to self-processes that are in operation while people are in a romantic relationship. Specifically, these authors suggest that over time, people come to internalize the partner in their self. While doing so, new dimensions coming from one's partner are incorporated into the self. This process called self-expansion is expected to lead to personal growth. Furthermore, Aron and colleagues (Lewandowski et al., 2002) suggest that people may also experience a process of self-constriction where they end up losing some elements of the self. However, this process is hypothesized to take place especially following a breakup. Carboneau and Vallerand (2010) have built upon the seminal work of Aron and his colleagues and have sought to extend this work in at least three ways. First, although Carboneau and Vallerand (2010) agree that self-expansion takes place during relationships, they posit that one needs not go through a breakup to experience self-constriction. This phenomenon can take place while one is in a relationship, as well. Second, Carboneau and Vallerand suggested that people can experience self-expansion and self-constriction to different degrees, even in combination, and one of the personal determinants of these self-processes is the type of passion that one has for the loved one.

Finally, Carboneau and Vallerand also propose that self-expansion and self-constriction are embedded in different conceptions of love that differ as a function of passion. Several authors (e.g., Fromm, 1956) have proposed the existence of two conceptions of love. A first conception of love is what is referred to as a “symbiotic union” where one seeks to fuse completely with the loved one and to become more like him or her. This is achieved through internalizing elements of the loved one in the self (self-expansion)

as well as eliminating elements of one's self that would differ from the loved one (self-constriction). This would appear to characterize obsessively passionate individuals who wish to be constantly with the loved one and who suffer when they cannot be with him or her (Ratelle et al., 2009). As Fromm suggests, the person who adopts this conception becomes "a slave to his passion." Such a conception of love would not appear as particularly healthy as one may lose him or herself in the relationship, losing past elements of self in the hope of getting closer to the loved one. The second type of love is what is often called "mature love" where there is union with the loved one but while preserving one's identity. This is achieved by internalizing some elements of the loved one (self-expansion) without engaging in self-constriction. Such a conception of love should be conducive to personal growth as one adds to the self without any loss of prior self content. Carbonneau and Vallerand (2010) reasoned that because harmonious passion entails an open and nondefensive interaction with one's partner this should lead to self-expansion and the prevention of self-constriction. These hypotheses were tested in two studies. Results of the first study (Carbonneau & Vallerand, 2010, Study 1) using structural equation modeling analyses provided support for these hypotheses. Specifically, harmonious passion was found to prevent self-constriction and lead to self-expansion. In turn, self-expansion predicted perceptions of personal growth due to the relationship. However, obsessive passion led to both self-expansion and self-constriction with the latter negatively predicting personal growth.

The purpose of the second study (Carbonneau & Vallerand, 2010, Study 2) was to replicate and extend the above findings by incorporating the personal determinants of passion in the sequence. Aron et al. (1992) have shown that one can internalize the loved one in the self. However, they do not posit the existence of different types of internalization. In line with the DMP and the research of Ratelle et al. (2009) discussed previously, Carbonneau and Vallerand proposed that the internalization of the loved one can be autonomous or controlled depending on the type of personality (autonomous vs. controlled orientations) held by the individual, thereby respectively leading to a harmonious or obsessive passion for the loved one. In sum, Carbonneau and Vallerand (2010, Study 2) proposed a model where an autonomous personality orientation with an internalization of the loved one should lead to a harmonious passion, whereas a controlled personality orientation with an internalization of the loved one should lead to an obsessive passion. In turn, harmonious passion is expected to strongly lead to self-expansion and the prevention of self-constriction, whereas obsessive passion is expected to lead to both self-expansion and self-constriction. Finally, self-expansion is expected to promote personal growth in the relationship, whereas self-constriction is hypothesized to undermine self-growth. To test the above model, a total of 215 university students who were involved in a regular heterosexual relationship

completed scales assessing the internalization of the loved one in the self (through the [Aron et al., 1992](#) overlapping circles), the autonomous versus controlled personality orientations with the Global Motivation Scale ([Guay et al., 2003](#)), the Romantic Passion Scale ([Ratelle et al., 2009](#)), self-expansion ([Lewandowski & Aron, 2002](#)), self-constriction ([Carboneau & Vallerand, 2010, Study 1](#)), as well as a measure of personal growth due to the relationship (a scale validated for the purpose of the study). Results from structural equation modeling analyses controlling for the length of the relationship provided support for the model. The results are illustrated in [Fig. 3.11](#).

The research of [Carboneau and Vallerand \(2010\)](#) underscores the fact that not all relationships lead to personal growth. Rather, personal growth due to the relationship takes place only for those relationships that are fueled by harmonious passion. In fact, those that are triggered by obsessive passion lead to some positive elements (some self-expansion), but also to a loss of self through self-constriction processes. Thus, it would appear that the net result is mixed at best. Future research is needed to identify the nature of the differential behaviors emitted by harmoniously and obsessively passionate individuals that would lead to such diametrically opposed outcomes. Finally, perhaps the most important conclusion from such research is that they provide support for the position that there seems to be two different conceptions of love with each one rooted in a specific type of passion for the loved one. Research along those lines would appear exciting.

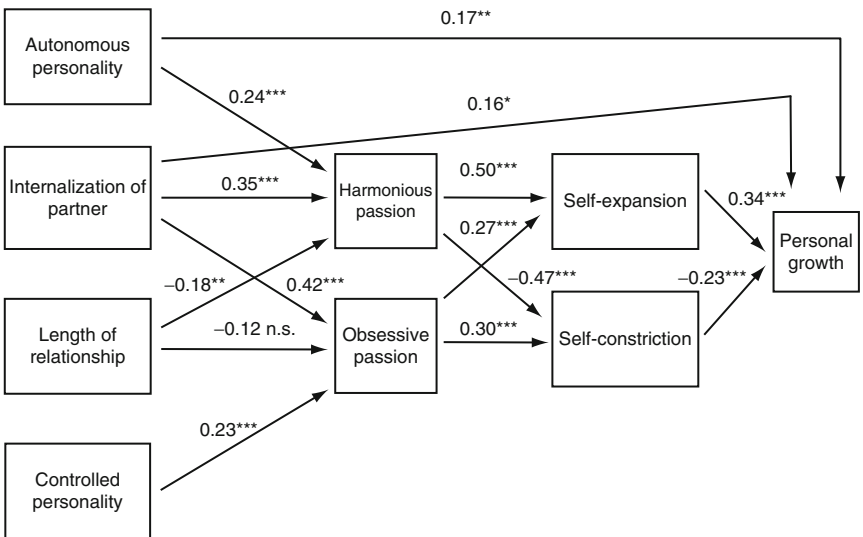


Figure 3.11 Results from the Structural equation modeling analyses of the passion and self-expansion/self-constriction model ([Carboneau & Vallerand, 2010](#)). For sake of clarity, the disturbances and the covariances are not presented.

Overall, the findings presented in this section provide support for an integrative sequence where social and personal determinants facilitate harmonious and obsessive passion that, in turn, generally lead to adaptive or less adaptive outcomes, respectively. Results on this sequence are important theoretically, as they provide support for the DMP. Furthermore, from an applied perspective, increased understanding on the determinants of passion is amenable to personal and social changes, eventually leading to adaptive outcomes. Future research on this issue is thus deemed important.



8. PASSIONATE FUNCTIONING UNDER DIFFERENT SITUATIONS

It is typically assumed in social psychology that the internalization process is unimodal. That is, the internalization of a person (e.g., [Aron et al., 1992](#)) or an object or activity is hypothesized to go through only one type of internalization process. Indeed, most self/identity theories posit that activities ([Csikszentmihalyi et al., 1993](#)), groups ([Tajfel & Turner, 1986](#)), or individuals ([Aron et al., 1992](#)) are internalized or not. However, based on Self-determination Theory (e.g., [Deci & Ryan, 2000](#); [Deci et al., 1994](#); [Ryan & Deci, 2000](#)), the DMP posits that the type of internalization (autonomous vs. controlled) matters greatly and thus the DMP makes more refined predictions regarding the behavior of highly involved individuals, such as passionate ones, in specific situations. This is especially the case when situations have implications for one's sense of identity (e.g., success or failure; [Sedikides & Gregg, 2003](#); [Sedikides & Strube, 1997](#)). When finding themselves in such situations, passionate individuals should react differently as a function of the predominant type of passion that they hold toward the passionate activity. At least three situations seem relevant: (1) facing irremediable success and failure; (2) preventing failure by aggressively removing interpersonal obstacles; and (3) performing following the reception of positive or negative self-information. These situations and relevant research are discussed below.

8.1. Subjective well-being following irremediable success and failure

Getting an A+ on a finals exam; playing poorly and losing in the last game of the season; failing to make the school's orchestra. Certain situations connote clear success or failure that cannot be changed (at least not in the near future). Thus, one has to deal affectively with these situations ([Campbell & Sedikides, 1999](#); [Sedikides & Gregg, 2008](#)). How should individuals with a predominant obsessive or harmonious passion react

psychologically to such situations? Following success, all is well, and thus similar levels of well-being should be experienced by harmoniously and obsessively passionate individuals. However, it is expected that the major difference between the two types of passionate individuals should take place following failure. Indeed, because so much is riding on doing well for obsessively passionate individuals (e.g., maintaining their identity and their sense of self-esteem), failure may have a more devastating psychological impact on their well-being than for those who are harmoniously passionate and who have a secure sense of self to face the negative information head on, in a mindful and nondefensive manner.

We recently tested these hypotheses in two studies (Lafrenière et al., 2009c). In the first study, 64 professional painters, who had more than 20 years of experience, participated in a web survey. They first completed the Passion Scale with respect to painting and were then randomly assigned to one of two conditions. In these conditions, they were asked to recollect either a period of their professional life where they were highly creative (success condition) or not very creative (failure condition). Then participants were asked to recall how satisfied they were with their life at that point in time using the French form (Blais et al., 1989) of the Satisfaction with Life Scale (Diener et al., 1985). Participants were split into harmoniously and obsessively passionate groups (using the procedures described previously) and a 2 (Passion Type: Harmonious vs. Obsessive Passion groups) $\times$ 2 (Success/Failure) ANOVA was conducted on the life satisfaction scores. The results revealed the presence of a significant interaction. This interaction is displayed in Fig. 3.12. As hypothesized, when successful, both types

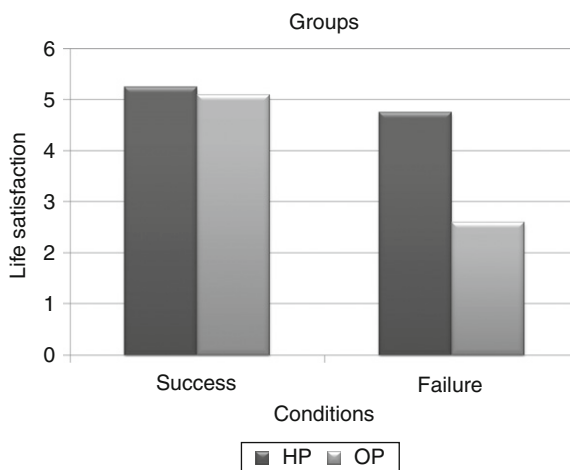


Figure 3.12 Results of the analyses of variance on the effects of passion types and success/failure on the life satisfaction of professional painters (Lafrenière et al., 2009c, Study 1).

of passionate painters had equally high levels of life satisfaction. However, when unsuccessful (the less creative condition), harmoniously passionate painters remained highly happy with life, whereas obsessively passionate people showed a highly significant reduction in life satisfaction.

The above findings suggest that obsessively passionate individuals experience a decrease in life satisfaction following an important failure on the passionate activity. However, this first study had one important limitation: it relied on participants' recollection of their life satisfaction. Thus, it is possible that the memory of the two passionate groups works differently and may have biased their life satisfaction assessment (Sedikides & Green, 2000, *in press*). We thus conducted a second study (Lafrenière et al., 2009c; Vallerand et al., 2009, Study 2) to replicate the findings of Study 1 while correcting this limitation. This second study was conducted with 77 passionate hockey fans using a diary study during the 2009 National Hockey League (NHL) playoffs. Fans of various hockey teams first completed the Passion Scale and the life satisfaction scale through a web survey before the start of a playoffs series involving their favorite team. They then completed the French form of the Satisfaction with Life Scale each morning following their team's game (whether it was a loss or a win). Hierarchical linear modeling (HLM) analyses were conducted on the life satisfaction data. The results replicated those of Study 1. Specifically, the results revealed the presence of a significant between-person level effect where obsessive passion moderated the relation between performance and life satisfaction. The more fans reported an obsessive passion toward their team, the greater was the positive impact of a win on their life satisfaction. Furthermore, the more fans reported an obsessive passion toward their team, the greater was the negative impact of a loss on their life satisfaction. As expected, harmonious passion had a main effect (the higher one's harmonious passion, the higher one's life satisfaction). However, harmonious passion did not moderate the relation between team performance and life satisfaction. These findings reveal that the two types of passionate individuals do react differently to objectively identical success versus failure situations (of one's favorite hockey team).

One key assumption of the DMP is that the two forms of passion differ with respect to the type of contingencies underlying their engagement in the passionate activity. Specifically, it is hypothesized that with obsessive passion certain contingencies are attached to the activity, such as self-esteem. However, such is not the case with harmonious passion that is hypothesized to be relatively free from such contingencies. Past research on self-esteem contingencies (e.g., Crocker & Park, 2004) has shown that people who have high self-esteem contingencies with respect to a variable source (e.g., one's performance on a given activity) will see their self-esteem fluctuate more than those with lower contingencies. It thus follows from the above that the self-esteem of obsessively passionate individuals should

fluctuate much more in situations of success and failure than that of harmoniously passionate individuals.

To test the above hypothesis, [Mageau et al. \(2009b\)](#) carried out a study with young adults who were passionate about Magic^{The Gathering} card games. This game is based on the Dungeons and Dragons role playing games. Participants were recruited through various ads and came to the lab to participate in a Magic^{The Gathering} tournament. The tournament started with a first questionnaire in which players completed measures of passion ([Vallerand et al., 2003](#)), self-esteem contingencies (of the Magic card game; using an adapted version of the [Crocker et al., 2003](#) scale), as well as global ([Rosenberg, 1965](#)) and state self-esteem ([McFarland & Ross, 1982](#)). All participants played at least five rounds with the top eight players of each tournament playing three additional rounds. Actual performance for each round was recorded and players completed measures of state self-esteem ([McFarland & Ross, 1982](#)) after each round.

HLM analyses were conducted on the self-esteem data. The results revealed that actual performance was a significant within-person predictor of state self-esteem, with games won overall producing higher levels of state self-esteem than games lost. At the between-person level, as expected, global self-esteem positively predicted state self-esteem. Of major interest, results showed that obsessive passion moderated the relation between actual performance and state self-esteem. This interaction revealed that the more people reported an obsessive passion toward the Magic card game, the greater was the positive impact of a win on their state self-esteem. As expected, harmonious passion did not moderate the relation between actual performance and state self-esteem. Additional analyses revealed that the self-esteem contingencies scale (for the Magic card game) yielded the same findings as obsessive passion. Further, when both obsessive passion and self-esteem contingencies were incorporated in the same analyses, the effects of obsessive passion disappeared. It would thus appear that the effects of obsessive passion on state self-esteem operate through self-esteem contingencies processes.

The studies reviewed so far in this section showed that following failure, harmoniously passionate individuals do not suffer as much as those who are obsessively passionate. But is it always the case? Is it possible to identify situations where even harmoniously passionate individuals will show a drop in psychological well-being? What about situations where an outcome is of utmost importance and cannot be changed at the short-term level? An instance of such a situation would be failing to get into graduate school or not making a much-desired team or orchestra. Would such situations also affect the well-being of harmoniously passionate individuals?

We tested this possibility in the final study to be discussed in this section ([Amiot et al., 2006](#)). Male adolescent and young adult hockey players ($n = 233$) who had been playing competitive hockey for several years

presented themselves at a tryout camp for a team playing in a highly competitive league. Making the most competitive league was very important for their future career as a hockey player. Athletes completed a questionnaire at Time 1 assessing their level of passion toward hockey as well as their subjective well-being (the French form of the Satisfaction with Life Scale by [Blais et al., 1989](#); the PANAS Scale of [Watson et al., 1988](#); and the Center for Epidemiological Studies Depression Scale, [Radloff, 1977](#)). Two weeks later, at Time 2, athletes completed a second questionnaire assessing well-being immediately after finding out if they had made the team or not. We created two groups of harmoniously and obsessively passionate hockey players using the same procedures as those reported earlier (e.g., [Philippe et al., 2009b](#); [Vallerand & Houlfort, 2003](#)). Then a 2 (Passion Type) $\times$ 2 (Success/Failure) ANCOVA was conducted on Time 2 well-being, controlling for Time 1 well-being. Results showed that participants who did not make a team from a highly competitive league (and thus whose future career in hockey was seriously jeopardized) experienced significantly lower levels of psychological well-being than those who made that team (i.e., those who were selected by a more competitive league), irrespective of their type of passion. Harmoniously passionate individuals, then, can suffer psychologically following failure just as obsessively passionate individuals do. However, what these findings suggest is that it takes a highly significant negative event to negative affect harmoniously passionate individuals' psychological well-being.

There was also a second purpose to the Amiot et al. study. Specifically, in line with Person-Environment Fit (P-E) perspective, we sought to determine if there were different situations or contexts wherein each type of passionate individuals would thrive psychologically and experience high levels of well-being. A P-E fit is achieved when there is a match between personal characteristics of the person and characteristics of the environment. Past research has shown that having a P-E fit is positively associated with various indices of psychological well-being, including life and work satisfaction, and personal accomplishment, and negatively associated with negative indices such as emotional exhaustion, depersonalization, and somatic complaints ([Harackiewicz et al., 1987](#); [O'Connor & Vallerand, 1994](#); [Tauer & Harackiewicz, 1999](#)). It was hypothesized that highly competitive environments that promote a rigid and inflexible type of persistence and involvement, and which require individuals to be overly involved in the activity at the expense of other life domains, can be seen as fitting well with an obsessive type of passion. Conversely, less competitive environments, while still being demanding, do not require an inordinate investment of time and energy in the activity. Such environments should fit better with individuals holding a harmonious passion who may have more diversified interests ([Vallerand & Houlfort, 2003](#); [Vallerand et al., 2003](#)). In line with past motivation research (e.g., [Tauer & Harackiewicz, 1999](#)), a match

between the passion type and the environment would be expected to lead to higher levels of subjective well-being.

To provide a test of the above hypotheses, the hockey players of the Amiot et al. study were followed 2 months after the team selection (i.e., after approximately one-third of the regular hockey season had elapsed). This period of time allowed players ample time to get used to their environment. Participants completed the same well-being measures at this time (Time 3). In line with the P-E fit perspective, results from the ANCOVA revealed the presence of an interaction at Time 3, controlling for Time 1 well-being. More specifically, it was found that obsessively passionate individuals who were playing in the highly competitive leagues displayed higher levels of well-being compared to harmoniously passionate athletes who did. Conversely, among the athletes who ended up playing in the less competitive leagues, harmoniously passionate athletes reported higher levels of well-being than obsessively passionate ones.

Overall, these results provide support for the match hypothesis. Thus, to the extent that the environment people engage in on a regular basis is consonant with their type of passion, people will adapt positively and experience increased well-being. However, if there is no match between their predominant type of passion and the environment in which they operate, people's adaptation will not be as positive, and may even be downright negative.

Future research is needed to expand the present findings in at least two ways. First, we need to identify the processes through which matches and mismatches affect the well-being of harmoniously and obsessively passionate individuals. A potential explanation may have to do with conflict. Specifically, although harmonious passion has previously been associated with less conflict between the passionate activity and other life pursuits (Stenseng, 2008; Vallerand et al., 2003, Study 1), it is possible that in a highly competitive context, conflict might actually be experienced more by harmoniously passionate than by obsessively passionate individuals. This is because harmoniously passionate individuals may experience conflict between the high levels of sustained activity involvement necessary to achieve high levels of performance in the activity, on the one hand, and their harmoniously oriented needs and goals, which (in addition to involvement in the passionate activity) may also include personal development and engagement in other life pursuits, on the other hand. However, the neglect of other life pursuits at the expense of increased engagement in the activity may actually fit in well with the objectives sought by obsessively passionate athletes. In such conditions, these individuals would therefore experience less conflict than their harmoniously passionate counterparts. The exact opposite situation would appear to take place in less competitive environments where less conflict would be experienced by harmoniously passionate than obsessively passionate individuals.

A second research avenue of interest would use longitudinal designs to determine if harmoniously passionate individuals adapt over longer periods of time to “obsessive” environments, such as high-level leagues. This is a key question from both theoretical and applied perspectives. From a theoretical standpoint, such research would allow us to better understand the coping and adaptive processes of harmoniously passionate individuals. From an applied standpoint, it would allow us to determine if harmoniously passionate individuals can function optimally in high-pressure environments conducive to high performance. Research on performance (e.g., Vallerand et al., 2007, 2008a) that has shown that individuals with a predominant harmonious passion for their craft are found at the highest levels of performance suggests that they can. It would thus appear that harmoniously passionate individuals can thrive in highly demanding environments. So, why the discrepancy with the present findings? One potential answer is that it takes some time for harmoniously passionate individuals to adjust to environments that are opposite their nature (i.e., highly demanding environments). However, these individuals can adjust and eventually should experience high levels of well-being because they should be able to engage in a flexible reorganization of their life. Such a reorganization should allow them to engage more often in the passionate activity (and derive positive affect from participation), and yet to mentally disengage from the activity when not performing it, and thus experiencing positive affect from engagement in other life activities. A second possibility is that harmoniously passionate individuals may proactively work to produce changes in the high-demanding environment so as to make it more amenable to a harmonious coexistence with other life pursuits. Future research is needed in order to probe these issues.

In sum, we have seen in an earlier section that, in general, obsessive passion leads to lower levels of psychological well-being than harmonious passion. The results from the research reported in the present section suggest that this conclusion must be qualified to some extent. First, although in general, harmonious passion may lead to higher levels of well-being, differences with obsessive passion seem to operate mainly in failure situations (Lafrenière et al., 2009c; Mageau et al., 2009a). Indeed, in success conditions, no differences appear between the two types of passionate individuals. Second, when the outcome is supremely important, no differences were obtained between the two types of passionate individuals, at least as pertains to psychological well-being (Amiot et al., 2006). Finally, it would appear that a P–E fit process is at play where environments that match one’s type of passion are conducive to higher levels of subjective well-being. Future research is needed to better understand the psychological processes at play for passionate individuals in different situations and how these processes affect their sense of well-being and other outcomes.

8.2. When failing can be prevented by attacking the threat source

We have seen in the section on passion for a cause that having a predominant obsessive passion can lead one to engage in extreme behavior more than having a harmonious passion (Gousse-Lessard et al., 2009; Rip & Vallerand, 2007). We have recently conducted a series of studies to gain a better understanding of the conditions under which such aggressive behavior is likely to occur, in various real-life situations, including those that pertain to sport and road rage.

The basic relation between passion and aggression was first tested in two studies with basketball players (Donahue et al., 2009b). Results of Study 1 confirmed that college basketball players with a predominant obsessive passion generally report being more aggressive when they play than those with a predominant harmonious passion. The goal of Study 2 was to determine under which circumstances obsessively passionate athletes are more likely to display aggressive behavior. We posited that these violent or aggressive behaviors are more likely to take place when one's sense of competence and identity has been threatened. Indeed, research has shown that aggressive behavior can result from threatened egotism (i.e., highly favorable views of the self that are disputed by others; Baumeister et al., 2000). When their self-views are threatened, people are motivated to act aggressively in order to restore positive self-views. This would be even more the case if such aggression leads to success in the situation at hand. Thus, it would be under conditions where identity is threatened or diminished that one would be likely to react aggressively toward others in order to restore one's positive self-views (Steele, 1988). Furthermore, we propose that such an effect should be even more important for obsessively passionate individuals. This is because of their defensive mode of functioning that leads them to be highly motivated to defend against any threat that is targeted at the self (see Hodgins et al., 2006). Such is not the case for harmoniously passionate individuals who can face threatening information nondefensively. Of additional importance is the fact that research has shown that when individuals have the opportunity to self-affirm (Steele, 1988) or to focus on some of their competent personal skills or abilities before having their identity threatened, then they become less defensive about the threatening information. One would then predict that people would be much less aggressive under self-affirming conditions. In fact, under conditions of self-affirmation, differences between the two types of passionate individuals should be much less pronounced because their sense of identity has been secured before receiving the threatening information.

In Study 2, Donahue et al. (2009b) tested the above hypotheses. College basketball players first completed the passion scale toward basketball and were then randomly assigned to one of two conditions: identity threat or

self-affirmation. In line with research on self-affirmation (e.g., [Steele, 1988](#)), identity threat was induced by asking participants to reflect on some of their weaknesses as a basketball player, whereas participants in the self-affirmation conditions were asked to reflect on their strengths. Finally, participants read three hypothetical situations and for each one responded to four items that measured the athletes' intention to use aggression in that situation. For instance, the first situation read:

There are 2 seconds left in an important game. Your team is winning by one point. The other team shot the ball and there is a rebound. An opponent is just about to make a "tip in" and win the game. You are under the basket and nobody is looking at you (not even the referees) because all eyes are turned toward the opposing player. What do you do to the opposing player?

Participants then indicated on a 7-pt scale the extent to which they would behave aggressively on each of four items that reflected a linear increase in aggression: (1) "I let him (her) shoot," (2) "I try to break his (her) concentration by screaming," (3) "I touch him (her) slightly and hope that it will be enough to make him (her) miss," and (4) "I clip his (her) legs and act as if it was a box out." A composite score reflecting the linear increase in aggression from items 1 to 4 was computed.

It was expected that obsessively passionate players in the identity-threat condition would display higher levels of situational aggression compared to harmoniously passionate players because they would want to defend against such threat and restore the integrity of their identity. Moreover, we expected to find no difference on the situational aggression between obsessively and harmoniously passionate players under the self-affirming condition because the player's identity is not on the line in such a situation. A 2 (Passion Types) $\times$ 2 (Identity-threat vs. Self-affirmation) ANOVA was conducted on the behavioral intentions of aggression. The results revealed the presence of a main effect for passion where obsessive passion led to higher levels of aggression than harmonious passion. These findings replicated those of Study 1. More importantly, the results also revealed the presence of an interaction that supported the hypotheses. Although no difference took place between the two types of passionate groups under conditions of self-affirmation, significant differences appeared under identity-threat conditions. Specifically, under these conditions, obsessively passionate athletes were found to be more aggressive than harmoniously passionate ones.

Although research by [Donahue et al. \(2009b, Study 2\)](#) provides empirical support for the hypotheses, it nevertheless relied on self-reports of behavioral aggressive intentions, rather than on observable behavior. In another series of studies on passion and aggression, [Philippe et al. \(in press-b\)](#) were interested in examining the role of passion in actual

aggressive driving behavior. The phenomenon of aggressive driving behavior (or road rage) is worth investigating because it deals with the very situation that interests us in the present section: the aggressive removal of the obstacle that threatens one's identity. Indeed, in the phenomenon of road rage, individuals display aggressive behavior toward the slow driver because he or she represents a threat to their identity as a good driver by slowing them down. Furthermore, by displaying aggressive behavior not only do they vent anger but they also typically enhance their chances that the slow driver will move to the side and let them go forward with their driving quest. Two studies were interesting in particular. In one study (Philippe et al., *in press-b*, Study 2), 465 middle-age individuals ($M = 47.8$ years) who represented a random sample representative of the drivers of the Province of Quebec, were asked to complete the Passion Scale for driving and then to recollect a recent real-life driving event where they were frustrated by another driver. They then indicated the extent to which they behaved aggressively using various behavioral indices such as showing the finger or one's fist to the driver, cursing, or even using one's car to get back at the driver based on the Driving Anger Expression Inventory (Deffenbacher et al., 2002). The results revealed that obsessive (but not harmonious) passion predicted aggressive behavior in the recent incident.

In the second study (Philippe et al., *in press-b*, Study 3), we went further and had highly passionate male drivers come to a driving simulation lab. This lab contains a real car facing a huge screen vividly simulating the road ahead. Participants were first introduced to a second driver who ostensibly would be driving a yellow car in another room. Both drivers were to be in the same "race." In reality, the second driver was an accomplice and all obstacles, including the yellow car, were controlled by the computer. Of importance is that participants were videotaped the whole time. There was only one condition, the same for all participants. They were told that their goal was to reach destination by a certain time. After some acclimation time, the experiment began. All went well for the first few minutes until the yellow car passed the participant's car, got in front of him, and slowed down. Then, each time that the participant tried to pass the yellow car, it would not let him pass. Periodically, the participant was reminded that he was already late and if it continued like this he would not reach destination on time (identity threat). Finally, after 30 min the participant reached destination (late) and was asked to complete scales assessing various questions, including some dealing with his anger toward the driver of the yellow car and his level of aggressive behavior displayed toward that driver during the driving episode.⁴

⁴ It should be underscored that the whole set up was highly realistic and believable. In fact, several participants let their frustration show several times during the experimental session. In fact, one of the participants bursting with anger got out of the car and wanted to see the driver of the yellow car. Thus, we believe that participants were taken by the whole set up, thereby increasing the validity of our findings.

Results from correlational analyses revealed that obsessive passion positively predicted anger and both self-report and objective measures of aggression (as assessed by video observers) whereas harmonious passion did not. In addition, results from a path analysis revealed that obsessive passion predicted feelings of anger that, in turn, predicted both the objective and subjective indices of aggression.

Overall, research reviewed in this section revealed that obsessive passion does indeed lead to aggressive behavior, whereas harmonious passion does not. These results were obtained in real-life situations, as well as under controlled laboratory conditions and with an objective assessment of aggression. These results thus replicate with some improvement those obtained previously on passion for a cause and extreme behaviors (Gousse-Lessard et al., 2009; Rip & Vallerand, 2007). Of additional importance, we found that aggression is especially likely to take place for obsessively passionate individuals following identity threat and when aggression is likely to help remove the obstacle (or threat) that prevents achieving success. Research is needed to determine under which conditions, if any, harmonious passion is likely to lead to aggression.

8.3. Performance following the reception of positive or negative self-relevant information

Although the research on performance reviewed previously showed that in general both types of passion were conducive to better performance through their impact on achievement goals and deliberate practice (e.g., Bonneville-Roussy et al., *in press*; Vallerand et al., 2007, 2008a), there might be some distinctions with respect to the situations in which the two types of passionate individuals perform best. One such situation deals with having to perform immediately following the reception of positive or negative self-information. For example, a pianist has just been criticized by the orchestra director in front of everybody at rehearsal for having made a glaring mistake. How will she perform now that she is about to repeat her performance? How would she perform if she had received positive feedback?

As discussed previously, the DMP posits that the two types of passion, harmonious and obsessive, lead to two different modes of functioning with different implications as pertains to performance following the positive or negative information one receives in such situations. Because harmonious passion entails engaging in the passionate activity with a secure self-esteem and a flexibility and openness to experience information in a nondefensive, mindful manner (Brown & Ryan, 2003), there would be no need to self-protect in the face of negative self-information. Thus, a harmoniously passionate individual should be able to directly face negative self-relevant information, to attempt to make sense of it, and perhaps even to learn from it (Kumashiro & Sedikides, 2005). Reception of positive information is also

performed in a nondefensive fashion, where the positive feedback is seen as an important cue that one is progressing well toward self-relevant goals. Such positive information should enhance one's motivation to pursue task engagement fully. The second, more obsessive, mode of functioning leads people to engage in the passionate activity with a fragile and contingent sense of self-esteem (Crocker, 2002; Kernis, 2003) and a defensiveness against experience that leads one to self-protect. As a consequence, facing negative self-relevant information is highly threatening and obsessively passionate individuals would be highly motivated to eliminate or reduce such threats. These individuals would also perceive positive information defensively. Instead of perceiving such information as cues regarding one's goal progression, obsessively passionate individuals would rather perceive such information as an indication that threats have been successfully avoided and that all is safe. There would then be little motivation to outperform oneself.

These two modes of functioning have crucial implications for how harmoniously and obsessively passionate individuals perform following positive and negative self-relevant information. We propose that reflecting on personal weaknesses with respect to their passionate activity would represent a highly self-threatening situation that obsessively passionate individuals would defend strongly against. In line with Self-Affirmation Theory (Steele, 1988), engagement in a subsequent task where performance is assessed would represent a welcome opportunity to redeem oneself and alleviate negative self-perceptions, to the extent that such a task is perceived as self-relevant (Green et al., 2008, Study 2). Thus, this hypothesis should hold whether the task is the one people are passionate about or another task that is part of one's identity. In this situation (following reception of negative self-information) an augmentation of performance should be observed for obsessively passionate individuals. However, when in a self-affirmation state, such as after having been made aware of one's personal competence in the passionate activity, obsessively passionate individuals should perceive all threats to have been removed and their identity as secure. Consequently, their motivation to perform should be highly reduced and lower performance would be observed.

On the other hand, harmoniously passionate individuals, who do not hold such ego-invested self-structures, should react differently to the conditions of identity threat and self-affirmation. Because these individuals engage in their passionate activity nondefensively, providing them with identity-threat information should make them face the negative information directly and attempt to integrate it usefully. Such focus on the negative information at hand, and the integrative work that follows, should reduce the cognitive resources that can be allocated to a subsequent task, thereby leading to a drop in performance on this task. Conversely, in situations where self-affirmation is present, we posit that harmoniously passionate individuals would perceive such information as an indication that they are

progressing well toward a valued self-relevant goal and would therefore subsequently invest themselves actively in that goal and, thus, exhibit a higher level of performance.

Bélanger and Vallerand (2009) tested these hypotheses in a series of studies, including three that are discussed here. In one of these studies (Bélanger & Vallerand, 2009, Study 2), regular exercisers at a university fitness center were approached and performed a pretest strength performance task (the hand grip dynamometer task; Peters et al., 2005). Participants then completed a questionnaire that contained assessments of harmonious and obsessive passion (that allowed us to create the two passion groups). Participants were then randomly assigned to either a self-affirmation or an identity-threat manipulation. In line with the manipulations used by Donahue et al. (2009b), the identity-threat (self-affirmation) manipulation involved asking participants to elaborate on two important personal weaknesses (strengths) that they display as exercisers. Subsequent to the manipulation, their physical performance was assessed once more at Time 2. As expressed above, it was hypothesized that obsessively passionate exercisers would perform better following identity threat than following self-affirmation conditions, whereas the opposite results should take place for the harmoniously passionate exercisers. An analysis of covariance was performed on the performance data at Time 2, controlling for performance at Time 1. Results revealed that no main effects were found for either the manipulations or the passion type. Thus, just as in past research on performance (Bonneville-Roussy et al., *in press*; Vallerand et al., 2007, 2008a,b), there was no difference between the two passion types, and no gender main effect or interaction. Only a Passion type $\times$ Conditions interaction was obtained that provided support for the hypotheses. These results are displayed in Fig. 3.13.

Results from the above study allow us to identify the various conditions under which each type of passionate individuals perform best (and worst). Based on these findings, it would appear that the pianist in the preceding example would perform best following negative feedback if she is obsessively passionate, but best following positive feedback if she is harmoniously passionate. However, there is another similar situation that needs attention and it deals with performance on an unrelated task following feedback on the passionate activity. For instance, how would the pianist perform on her math finals exam, minutes after having received negative or positive feedback from the director? It is hypothesized that to the extent that being a student is part of the pianist's identity, then the same hypotheses are formulated with respect to the performance on the second, unrelated, activity. Indeed, Steele (1988; see also Sherman & Cohen, 2006), posits that using a second activity to redeem oneself may actually be the most preferred strategy following the experience of identity threat. Bélanger and Vallerand (2009, Study 1) have also conducted another study in which they

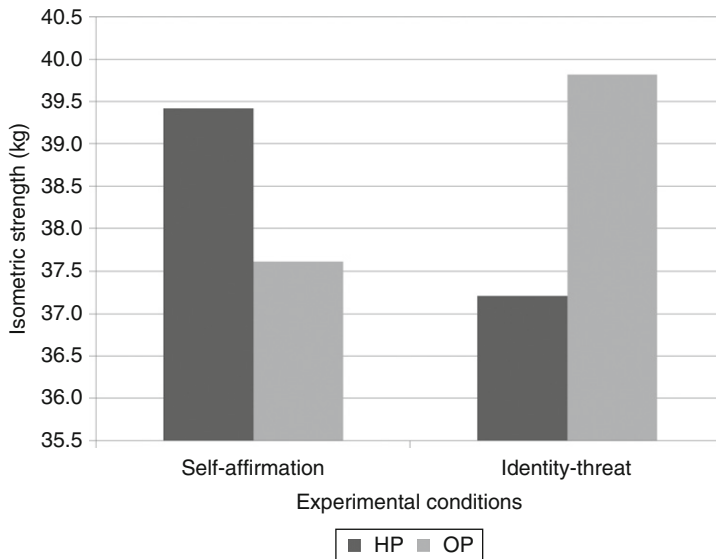


Figure 3.13 Physical performance as a function of passion types and conditions of identity-threat and self-affirmation (Bélanger & Vallerand, 2009, Study 2).

tested the above hypotheses. They used the same design as the previous study with two crucial modifications. First, the identity-threat and self-affirmation manipulations pertained to the activity that participants indicated was the dearest to their heart (so different passionate activities were mentioned by different individuals) and not exercise. And second, subsequent performance took place on a task unrelated to the passionate activity but related to one's identity as a student (i.e., a cognitive [anagrams] task). The results revealed the presence of the same interaction as in the preceding study.

Finally, in a third study (Bélanger & Vallerand, 2009, Study 3), the same design as the preceding study was used except that we also added a no-information control group to better understand the functioning of passionate individuals in the absence of objective self-relevant information. The results yielded two important findings. First, as found in the previous study, only a Passion type $\times$ Manipulations interaction was obtained, yielding the same findings. In addition, the performance of the control group for the harmoniously passionate individuals was equivalent to that obtained in the self-affirmation condition, whereas the performance of the control group for the obsessively passionate individuals was equivalent to that of the identity-threat condition. It thus appears that the usual functioning of harmoniously passionate people in the absence of self-information feedback is oriented toward a positive outlook where one perceives that things are progressing positively. On the other hand, the present results suggest that

the normal functioning of obsessively passionate individuals in the absence of self-information seems to be oriented toward a negative outlook where one perceives that things are not going well and is thus motivated to restore one's positive identity by performing well.

Overall, results from the above series of studies lead to at least three implications. First, neither type of passion proved superior to the other one overall. Rather, optimal performance depended on the interaction between the type of passion and the situation. The nondefensive style put forward by harmoniously passionate individuals proved to work best following reception of positive information but to be less effective after having received negative information. Conversely, the more defensive style espoused by obsessively passionate individuals was found to be highly effective following the reception of negative information but less so following positive information. These findings are in line with those of [Amiot et al. \(2006\)](#) where the two types of passionate individuals fared better psychologically in different types of environments. Thus, a P-E fit seems to exist such that there is a match between the person (type of passion) and a certain type of environment (supportive vs. threatening environment). Future research is needed to determine if other types of environmental conditions are conducive to a similar P-E fit as pertains to performance and other outcomes. Second, the fact that the open and nondefensive mode of functioning of the harmoniously passionate individuals proved to be counterproductive under identity-threat conditions deserves mention. Although the integrative work performed by harmoniously passionate individuals typically yields positive benefits in the long term ([Paulhus, 1998](#); [Robins & Beer, 2001](#); [Weinstein & Hodgins, 2009](#)), it appears to have some deleterious effects at the short-term level. Perhaps the key is to delay such integrative work until after completion of the immediate subsequent task. Clearly, future research is needed in order to compare the short- versus long-term impact of these two modes of functioning on performance as such research has clear theoretical and applied significance.

A final implication of the present findings is that they provide some support as well as certain challenges for Self-affirmation Theory ([Steele, 1988](#)). First, it appears that Self-affirmation Theory describes the functioning of obsessively passionate individuals very well following self-affirmation and self-threat conditions, but not that of harmoniously passionate people. Specifically, contrary to their obsessively passionate counterparts, who excelled when confronted with identity threats, harmoniously passionate individuals did not use performance to restore self-integrity under such conditions. Future research is needed to determine if or when harmoniously passionate individuals engage in processes outlined by Self-affirmation Theory. Second, of great importance is the finding that certain people (obsessively passionate individuals) can elevate their self-image through performance in the same domain in which the threat is presented. Self-affirmation Theory has

typically suggested that for self-affirmation processes to operate, people should be provided with the opportunity to perform on a second unrelated task (see [Sherman & Cohen, 2006](#)). As the results of the Bélanger and Vallerand study (Study 2) have shown, this is not necessarily the case. Indeed, obsessively passionate exercisers restored their identity by increasing their performance on the same task (hand-grip performance task). Thus, what these findings suggest is that for highly involved individuals being able to redeem oneself in the same activity may not only represent an acceptable way to self-affirm, but perhaps their number one option because the activity means so much to them. If such an option does not exist, however, then performance on a second activity might do as well, to the extent that it is part of identity.

In sum, the results from this overall section provide a better understanding of the situations and contexts that trigger different processes and outcomes in people with predominant types of passion. Future research in this area should prove particularly fertile.



9. FUTURE RESEARCH ISSUES

So far, in this chapter, I have reviewed several studies that provide strong support for the DMP. Although the research conducted to date is indeed encouraging, additional research is necessary to probe further the role of passion in people's lives. Below, I present certain directions for future research that would appear particularly exciting.

9.1. More on the development of passion

Research (e.g., [Mageau et al., 2009b](#)) reveals that a number of processes are important for the development of passion to take place (i.e., activity selection and valuation, identity, and internalization processes). However, other important issues should also be considered in the development of passion. These are discussed below.

9.1.1. The transmission of passion

Most people seem to remember a teacher who has inspired them and who has planted the seed of passion toward their studies and their future career. But does such a phenomenon exist? Can passion be transmitted by others? And if so, what are the processes involved in passion transmission and do they differ for the two types of passion? Some authors (e.g., [Cardon, 2008](#)) have proposed that the contagion of passion from an entrepreneur to his or her employees can take place and further posits that it takes place largely through emotional mimicry and goal alignment with those of the

entrepreneur. I agree with Cardon that individuals in a supervisory position (e.g., teachers, coaches, managers) who are dynamic, energetic, and enthusiastic should be more likely to transmit their passion for the task than those who are boring. However, I believe that the processes through which such a transmission takes place are different from those proposed by Cardon. The affect (e.g., enthusiasm) that is displayed by supervisors is picked up by others' (as was seen in the [Philippe et al., in press](#)—a studies on passion and quality of interpersonal relationships). Whereas perceived enthusiasm may lead to some positive affect in others (as would posited by [Cardon, 2008](#)), it is hypothesized that its main function is to underscore the value of the activity or issue at hand ([De Cremer & den Ouden, 2008](#)). Therefore, having an enthusiastic teacher should highlight the value of the activity and should set up conditions likely to lead to the internalization of the activity. Which type of internalization takes place, and thus which type of passion develops, depends on the immediate conditions (that are also largely under the control of the teacher or supervisor). Cardon does not distinguish between harmonious and obsessive passion. However, I suggest that it might prove important to do so as harmoniously passionate supervisors are more likely to transmit harmonious passion than obsessive passion to their subordinates whereas it should be the opposite for obsessively passionate supervisors. This is so because passionate individuals should seek to create for others the very same environment that they prefer. Thus, harmoniously passionate individuals should provide others with high levels of autonomy support, whereas obsessively passionate individuals should provide others with controlling behavior. As was seen in earlier sections, such behaviors influence the two types of internalization processes that lead to harmonious and obsessive passion, respectively ([Bonneville-Roussy & Vallerand, 2009](#); [Mageau et al., 2009b](#)). Though preliminary, cross-sectional, research is supportive of these hypotheses (see [Donahue et al., 2009a](#)). Future longitudinal research is clearly needed to provide stronger support for the proposed sequence.

9.1.2. On the stages of passion

When people think about passion and how it develops, they often believe that there might be some stages that people go through. For instance, people may initially experience an obsessive passion that, at some point in time, changes and becomes more harmonious in nature. Is it the case? Do the two types of passion follow some stages? Unfortunately, at this point in time, we do not have any conclusive empirical evidence on this issue. Preliminary evidence, however, seems to indicate that such is not the case. Thus, in the [Vallerand et al. \(2003, Study 1\)](#) study, we did not find any relation between length of involvement and the two types of passion. Furthermore, it will be recalled that in the [Mageau et al. \(2009a, Study 3\)](#) study reported earlier with beginning (4 months of experience) and experienced (10 years of

music involvement) music students, the experienced students reported higher levels of both harmonious and obsessive passion, as well as higher levels of passion (the passion criteria) than the beginners. In addition, for both groups, participants' score on harmonious passion was higher than that of obsessive passion. These results are contrary to a sequence where novices should have one type of predominant passion (e.g., obsessive passion) and experienced musicians another (e.g., harmonious passion) after a certain number of months or years of activity involvement. However, the findings from the two studies above are limited in scope as the design used was cross-sectional and not longitudinal in nature. In an analysis of additional data from the longitudinal study of [Mageau et al. \(2009a, Study 3\)](#) on the development of passion, [Lafrenière et al. \(2009b, Study 2\)](#) showed that for the few who ended up being passionate toward music (36% of the sample), the type of predominant passion (i.e., harmonious, obsessive, or nonpassionate) for music that was developed initially at the beginning of the term was maintained for approximately 70% of participants at the end of the term. Once again, these findings do not support the existence of stages of passion. Future research using longitudinal designs is needed in order to more clearly determine whether stages in passion take place or not.

9.1.3. Can passion be changed?

Another issue related to that of the development of passion deals with the change from one passion to another. For example, can an obsessive passion be changed into a harmonious one? Besides the work on attribution training (e.g., [Wilson & Linville, 1982, 1985](#)), I am not aware of any experimental research on this issue in the passion or motivation literature. Given that the activity is already passionate, this means that the activity is sufficiently important to have been internalized into one's identity. Thus, based on the DMP, one way to induce changes from an obsessive to a harmonious passion would be to replace the controlled by the autonomous internalization process. This could be done by having the person reflect on the variety of ways through which the activity is consonant with one's intrinsic values ([Kasser, 2002](#)) or identifying the different autonomous reasons why the activity is important for the person (e.g., fun aspect of it, the positive feelings experienced when engaging in the activity, perceptions of competence and creativity, sense of choice in deciding when and how to do the activity, etc.).

A related issue pertains to reducing or killing altogether an obsessive passion for an activity that has become permanently negative for the person. This may be the case for pathological gamblers, for instance (see [Philippe & Vallerand, 2007](#); [Ratelle et al., 2004](#); [Vallerand et al., 2003, Study 4](#)). Because of the negative nature of the activity for these individuals, and its negative role in the person's life, it would then appear best to eradicate the passion rather than change it into a more harmonious one. Based on the DMP, this could be done by undermining the valuation process because

it is the main process through which the internalization takes place. Thus, in line with the above, this could be done by having individuals list as many reasons as possible indicating why the activity is not important for them anymore and to elaborate on these. Furthermore, individuals could further elaborate on why the activity conflicts with aspects of their identity. Alternatively, in line with Glasser (1976), it might prove useful to lead individuals experiencing problems with respect to a given activity such as pathological gambling to develop a passion (even if obsessive) in activities with much less negative outcomes (e.g., running, painting, playing a musical instrument). The issue of change and undermining of passion is a fascinating one both from conceptual and applied perspectives and future research would do well to focus on this issue.

9.1.4. On the role of progression perceptions in the on-going development of passion

What is the role that perceptions of progression toward the activity play in the on-going development of the passion for a given activity? Among other things, we need to assess the relative role of perceptions of competence and of progression in maintaining one's passion high. Take the example of the passionate high-school guitar player who, although highly competent for her age, realizes that her music development has started to stall. How will this plateau in her abilities (or predicted relative lack of progression) affect her passion for music? Such perceptions of lack of progression (even in light of very high levels of competence relative to nonmusicians) might undermine one's passion because people might feel that the joy of playing music and excitement no longer will be forthcoming at some point. For instance, one may presently feel competent but nevertheless see that progression no longer will continue. Such perceptions of lack of progression might curtail the development of one's passion, especially if individuals feel that their desired "future self" (Markus & Nurius, 1986) or future identity as a musician no longer is attainable. However, individuals who perceive that they are progressing and are likely to continue doing so in the passionate activity might be more likely to develop or maintain a passion for this activity. Thus, perceptions of competence and progression would appear to have different implications for the on-going development of passion, with progression being perhaps more important as one engages further and comes to specialize in the activity.

Furthermore, it might prove important to determine if progression has the same impact on the two types of passion. Because of the rigid persistence that it creates, obsessive passion may lead one to persist in the activity no matter what the progression is likely to be. However, perceptions of progression should influence harmonious passion because it leads one to engage in the passionate activity with choice and flexibility. Persistence in the activity in this case represents a continued reflective choice to pursue

task engagement and perceptions of progression may represent one of the determinants of such choice. Thus, it would appear that perceptions of progression are more important for the maintenance of harmonious than obsessive passion. Future research on these issues would appear important to predict long-term passionate activity engagement that is needed to reach the highest levels of excellence.

9.2. Is harmonious passion all that good and obsessive passion all that bad?

The research reviewed in this chapter overwhelmingly revealed that, overall, harmonious passion leads to adaptive outcomes whereas obsessive passion leads to less adaptive and at times clearly maladaptive outcomes (see [Table 3.2](#)). Yet, we hasten to add that this does not mean that harmonious passion is always “good” and obsessive passion always “bad.” Let us first take a look at harmonious passion. We have seen that under certain conditions (especially identity threat), harmonious passion is conducive to lower levels of performance ([Bélanger & Vallerand, 2009](#)). Furthermore, it should be recalled that harmoniously passionate hockey players playing in highly competitive leagues experienced a decrease in subjective well-being ([Amiot et al., 2006](#)). These results highlight the fact that we have uncovered certain situations where harmonious passion does not lead to optimal functioning and future research is needed to pursue such work. One likely area where to conduct such research pertains to identity-threat situations. It appears that facing negative self-relevant information head on has deleterious effects on harmoniously passionate individuals’ situational performance. Perhaps these individuals should learn to use the coping device that obsessively passionate individuals are using at least at the short-term level when actually performing. Later on, they may very well want to further probe the issues, learn from the negative information, and grow from the experience.

On the other hand, obsessive passion has been found at times to lead to some positive outcomes. For instance, in the study with collectors ([Grenier et al., 2009, Study 1](#)), obsessive passion correlated positively with self-related positive affect (e.g., pride), but not with general type of affect (e.g., enjoyment) during a purchasing episode. Similar results were also obtained with soccer fans ([Vallerand et al., 2008b, Study 2](#)). Furthermore, recent evidence with online gaming has revealed that obsessive passion has been found to correlate positively with positive (and negative) affect ([Lafrenière et al., 2009a](#)). Finally, obsessive passion has been found to positively predict deliberate practice that, in turn, predicted objective levels of performance ([Vallerand et al., 2007, 2008a](#)). Future research is needed to determine why at times obsessively passionate experience some positive outcomes and why at other times they do not.

Overall, these findings reveal that obsessive passion is not all that “bad.” This comes out even more clearly when obsessively passionate individuals are compared to nonpassionate individuals (Philippe et al., 2009b, Studies 1 and 2). In this research, these two groups were not found to differ on various indices of subjective well-being. Unfortunately, these are the only two studies that compared these two groups. What these results suggest, however, is that in general obsessively passionate individuals suffer mainly when they are compared to harmoniously passionate individuals. They do not fare that badly when compared to nonpassionate people, especially as pertains to psychological well-being. Although obsessively passionate individuals seem to suffer more in certain situations such as following failure (Lafrenière et al., 2009c; Mageau et al., 2009b), such research did not include nonpassionate individuals and it still remains to be seen if these two groups would differ in such situations. In any event, we can safely conclude that engaging in a passionate activity out of obsessive passion prevents one from fully deriving the benefits that such involvement provides those who engage in it out of harmonious passion. Thus, somehow, obsessively passionate individuals cheat themselves out of some important positive outcomes (see Table 3.2 for a list of such outcomes). Clearly future research is needed to determine more clearly why this is so.

9.3. Are nonpassionate individuals doomed?

The preceding discussion raises the issue of nonpassionate individuals. Based on the available evidence (Philippe et al., 2009b; Vallerand et al., 2003, Study 1), these individuals represent between 15% and 25% of the population. We do not know much about these people. The only thing we know is that they do not hold a passion for even one activity in their lives and as a result are less happy (on a variety of well-being indices) than those with a predominant harmonious passion. However, they are just as happy as those who are obsessively passionate (Philippe et al., 2009b). So why are nonpassionate individuals less happy than harmoniously passionate individuals? Is it because there is some zest missing from their life due to the absence of a meaningful activity or cause (as is the case for harmoniously passionate individuals)? And why are they just as happy as obsessively passionate individuals? And why do they refrain from passionate pursuits? Is it because they do not want to experience the highs, fearing to experience the lows that often come with them? How do they handle success and failure in meaningful activities such as school or work? Other questions come to mind: Who are they (what is their personality like)? What is their life like? How are they perceived by friends and relatives? Are they perceived as bland and lifeless or, to the contrary, as well-balanced? These and other questions would appear important both from conceptual and applied perspectives.

9.4. On letting go: When the time has come to end engagement in the passionate activity

One interesting question that the DMP raises, deals with the consequences of permanently stopping activity engagement. Who is likely to adjust better psychologically after such “retirement” from the activity? Harmoniously passionate or obsessively passionate individuals? It could be hypothesized that harmoniously passionate individuals should fare better, because harmonious passion is characterized by a flexible engagement toward the activity (Vallerand et al., 2003). Thus, it should be easier for these individuals to disengage from the activity (see Wrosch et al., 2003) and move on to (or reinvest in) something else. On the other hand, because obsessive passion is characterized by a rigid persistence toward the activity and given that contingencies such as self-esteem are attached to the activity, individuals with an obsessive passion should have a difficult time letting go of their passionate activity. They should therefore not adjust well after retirement. Thus, athletes with a predominant obsessive passion may be more likely to come out of retirement à la Michael Jordan, and sometimes more than once.

A study of ours within the work domain (Houlfort & Vallerand, 2009) has addressed some of these issues. Workers who had recently retired were asked to retrospectively report their level of passion toward work and their current subjective well-being. Results revealed that harmonious passion for work was associated with enhanced subjective well-being, whereas obsessive passion was negatively related to well-being, following retirement. Because of the obvious limitations of retrospective designs, prospective and longitudinal research is needed in order to more clearly demonstrate the psychological processes involved in letting go of the passionate activity and determine if different processes are at play for the harmoniously and obsessively passionate workers. Future research should establish the role of passion in the decision to permanently disengage from an activity that people have been involved with for a lifetime, such as work, and the implications such a decision may have on subjective well-being.



10. SUMMARY AND CONCLUSION

The purpose of this chapter was to present the DMP (e.g., Vallerand, 2008; Vallerand & Houlfort, 2003; Vallerand et al., 2003) and review some of the related research. Passion is defined as a strong inclination toward a self-defining activity that one loves, values (finds important), and devotes a significant amount of time and energy to. Furthermore, two types of passion are proposed. Harmonious passion originates from an autonomous internalization in identity and entails control over the activity and a harmonious coexistence of the passionate activity with other activities in the self. On the

other hand, obsessive passion follows a controlled internalization and entails a relative lack of control over the passionate activity, rigid persistence, and conflict with other activities in one's life. Furthermore, a number of social and personal determinants are hypothesized to determine the initial and on-going development of passion for a given activity. Finally, in general, more adaptive outcomes are hypothesized to follow from harmonious than obsessive passion.

The review of evidence provides strong support for the model. Specifically, a Passion Scale was developed, assessing harmonious and obsessive passion. In addition, research on the development of passion provided support for the processes proposed by the DMP. Furthermore, research has shown that harmonious passion was found to promote adaptive outcomes to a greater extent than obsessive passion on a number of cognitive, affective, behavioral, psychological and physical health, interpersonal, intergroup, societal and performance outcomes using self-report as well as informant reports and objective data. It was also found that under certain specific situations, obsessive passion can lead to some positive outcomes and harmonious passion to less adaptive ones. Although much of the research conducted to date is correlational in nature, several studies using prospective and longitudinal designs showed that passion leads to changes in outcomes over time. Furthermore, although passion has been found to predict changes in outcomes, outcomes do not seem to predict changes in passion (e.g., [Carbonneau et al., 2008](#)). In addition, an increasing number of studies use experimental designs to test the processes and conditions through which passion leads to different outcomes. Thus, overall, the findings from such research would tend to support the view that passion can produce outcomes. Finally, directions for future research were also proposed.

The use of the word "passion" permeates people's lives, and yet very little theory and research have focused on this concept until recently. It is hoped that this presentation of the DMP and associated research will encourage future research on the passion concept, thereby providing important insights, as Aristotle proposed, on the very processes that contribute to being human.

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GOOD NEWS! CAPITALIZING ON POSITIVE EVENTS IN AN INTERPERSONAL CONTEXT

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Contents

1. Introduction	198
1.1. Sharing positive events	198
1.2. Positive and negative processes	200
1.3. The capitalization process as a novel research area	204
2. A Theoretical Model of Capitalization Processes	205
2.1. Positive events influence individual well-being	206
2.2. Positive events and positive affect	206
2.3. Positive events and the self-concept	207
2.4. Partner responses to capitalization attempts and the self	208
2.5. Partner responses to capitalization attempts and close relationships	210
2.6. A model of the capitalization process	212
3. Sharing Positive Events	214
3.1. What types of events are shared and with whom?	214
3.2. Sharing events with close others	216
3.3. Perceptions of reactions: Does reality matter?	216
3.4. Reactions to capitalization attempts	217
4. Capitalization Processes and Intrapersonal Outcomes	222
4.1. Mechanisms	225
4.2. Coping with good news	229
5. Capitalization Processes and Interpersonal Outcomes	230
5.1. Actual behavior	233
5.2. Experimental studies	234
5.3. Mechanisms	236
6. The Nature of Beneficial Responses to Capitalization Attempts	239
6.1. The heart of perceived responsiveness	239
6.2. Ambivalence	240

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6.3. Other factors influencing responses to capitalization attempts	242
6.4. Bidirectionality: Iterative capitalization processes in close relationships	244
7. Summary and Conclusions	245
7.1. Directions for future research	245
7.2. Conclusion	247
References	247

Abstract

Good things happen. In fact, positive events occur more often than negative events. In this chapter, we review research showing that people often turn to others to share their good news, a process called *capitalization*. These studies show that both the act of telling others about good events and the response of the person with whom the event was shared have personal and interpersonal consequences. We outline a theoretical foundation and propose a model of capitalization processes that includes mechanisms linking the act of telling others and their response to personal and interpersonal outcomes. This research has shown that when the close other responds in an active and constructive manner (and not in a passive or destructive manner), both the discloser and the relationship between the discloser and the responder profit. Personal benefits linked to capitalization processes include increased positive emotions, subjective well-being, and self-esteem, and decreased loneliness. Relationship benefits associated with capitalization processes include satisfaction, intimacy, commitment, trust, liking, closeness, and stability. We also review evidence for mechanisms involved in capitalization processes. Throughout this chapter, we discuss capitalization processes in the larger context of how people “cope” during good times and the value of having supportive partners in this process. Although research has consistently emphasized coping with negative events, our work suggests that positive events similarly provide both opportunities and challenges.

Wendy let me in I wanna be your friend
I want to guard your dreams and visions

(Bruce Springsteen, Born to Run)

Will had not been looking forward to his high school chemistry class. He usually did not like doing the experiments the teacher assigned for their lab. Much to his surprise, he enjoyed the lab assignment more than any of the others the class had previously done and it turned out perfectly. That night at dinner, he excitedly told his parents about the reactions he and his lab partner created. His parents tell him that they are so proud of him. They ask several questions about the lab, what he enjoyed about it, and discuss his burgeoning interest in science.

Gregg finally works up the courage to ask Delinah to go out with him. She agrees and they arrange to meet for dinner that weekend. Gregg is

disappointed that his friend Rusty doesn't answer his phone, he wanted to tell him about his upcoming date.

Suzanne, a hard-working advertising executive, is called in for a meeting with the company's vice president. She is told that because of her excellent track record she will be handling the firm's biggest and most important account. Along with this assignment comes a big promotion. As soon as she gets back to her own office, Suzanne closes the door and calls her husband to tell him her exciting news. She is very disappointed when her husband responds with a warm but quick, "That's nice, Dear," and asks if he should pick up the dry cleaning on his way home.

Every day, good things happen to people. Some positive events are major, such as landing your first job, acing the bar exam, or seeing two pink lines on a pregnancy test. Other positive events are rather routine, such as finishing a project at work, passing a pop quiz, or getting your toddler to bed on time. Until recently, psychologists had largely ignored questions about how people react to the positive events in their lives. Instead, researchers focused on what people do in the face of negative events. Although this work has yielded much valuable evidence showing that coping with stressors has important implications for health and well-being (Bower et al., 2008; Taylor & Stanton, 2007), we suggest that reactions to positive events are also influential (Gable & Reis, 2001).

The coping literature has described several psychological processes linked to negative events and stressors. For example, the way in which people cognitively frame a negative event when it occurs has been strongly linked to its immediate and prolonged effects (e.g., Folkman et al., 1986). The manner and amount of rumination on a negative event after it has occurred also has implications for health and well-being (e.g., Nolen-Hoeksema, 1996, 1998; Segerstrom et al., 2003). These coping processes are not only intrapersonal, taking place solely within the mind of the individual experiencing the stressor. Coping processes are also interpersonal, as the individual involves his or her social network in responding to stressors.

A great deal of research has examined how people use their social networks for support when bad things happen. This process is termed *social support*. The availability of supportive others during times of stress is strongly linked to health and well-being (e.g., Uchino et al., 1996). Social support plays a role in coping with both major life events and smaller, everyday hassles (e.g., Bolger & Eckenrode, 1991; Harlow & Cantor, 1995). In short, this research shows that seeking out others, the others' response to the support-seeker's needs, the perceived availability of supportive others, and simply the size of one's social network all influence coping with negative events and, by implication, overall health and well-being (e.g., Cohen et al., 1997; Cunningham & Barbee, 2000; Lakey & Cassady, 1990).

Research on coping and social support has provided important insights into psychological and physical processes involved in responses to negative events, but there are many reasons to believe that investigating how people respond to positive events holds equal promise (Reis & Gable, 2003). First, the frequency of positive events outweighs the frequency of negative events. For instance, estimates from daily experience studies conservatively place the ratio at about three positive events to every one negative event (Gable & Haidt, 2005). Interestingly, though, the number of published articles focusing on negative life events outnumbers those focusing on positive life events at more than seven to one.¹

A second reason to expect that positive events are important is that they are strongly linked to well-being and mental health. For example, everyday positive events are negatively associated with depressive symptoms (e.g., Zautra et al., 2000) and positively associated with daily self-esteem and perceived control (e.g., Nezlek & Gable, 2001). Links among positive events, positive emotions, the self-concept, and well-being are discussed in more detail in subsequent sections of this chapter; we note here that the associations between positive events and these outcomes are not accounted for by the occurrence (or absence) of daily negative events.

Finally, research has shown that even though positive events may be more frequent than negative events, people are better off when they do not treat them as routine. For example, when people systematically note the positive aspects of their lives (i.e., count their blessings), their well-being is enhanced on several dimensions (Emmons & McCullough, 2003). Similarly, work on savoring positive experiences indicates that when people reminisce about positive events, they also experience greater well-being. People who do so regularly show increased well-being (Bryant, 1989; Bryant et al., 2005). To be sure, as discussed later, we do not dispute research suggesting that “bad may be stronger than good” (Baumeister et al., 2001). Nonetheless, there is ample reason to believe that attention to the impact of positive events will provide important new insights into human behavior.



1. INTRODUCTION

1.1. Sharing positive events

In this chapter, we discuss theory and research about the social sharing of positive events, a process we call *capitalization*. One of the most important ways that people react to positive events is to tell others about them. In an

¹ This estimate was derived from a search of the electronic database *PsycInfo* using the key phrases “positive life events” and “negative life events” completed in May 2009 with no restrictions on publication type or year. The former produced 186 hits and the latter 1364 hits.

extensive cross-cultural study based on multiple methods and samples, [Argyle and Henderson \(1984\)](#) concluded that sharing good news with a close friend is one of the six most important rules of friendship. An early study by [Langston \(1994\)](#) supported their finding—when people shared or celebrated the news of a positive event with others, they experienced more positive affect than could be attributed to the event itself. Langston called this social sharing of good news capitalization. Capitalization appears to be quite common. In studies that we subsequently describe in greater detail, people tell at least one other person about the best thing that happened to them over the course of the day between 60% and 80% of the time (e.g., [Gable & Maisel, 2008](#); [Gable et al., 2004](#)).

Findings from daily experience studies dovetail with studies using different methods. For example, [Algoe and Haidt \(2009\)](#) asked participants to recall a time when they got something they had really wanted and describe what, if anything, they did as a result. Participants spontaneously mentioned telling or wanting to tell other people about their good feelings more than 80% of the time. Of course, people are more likely to share important events than to share trivial events. However, capitalizing on seemingly small events is also common ([Gable et al., 2004](#); [Reis et al., 2009](#), Study 5); for example, in our college-student studies, “sleeping in” is a commonly relayed positive event. More importantly, as we later elaborate, Langston label of “capitalization” was apt because the act of disclosing a positive event may expand its benefits beyond the event itself.

Similar to findings showing that the act of seeking out others in stressful circumstances does not by itself account for all social support effects, capitalization effects are not merely a function of relating the positive event to others. The response of the person with whom the positive event is shared is also important. That is, the nature of the target’s response to the capitalization attempt is systematically associated with the discloser’s outcomes. And because the responder is likely to be a close other (e.g., friend, romantic partner, family member, roommate), the response to capitalization attempts has implications for the ongoing relationship between the responder and the discloser.

In this chapter, we first provide the theoretical rationale and empirical background supporting our research on capitalization attempts, responses to capitalization attempts, and perceptions of the availability of effective capitalization support. We present a model for understanding the role of capitalization in both intrapersonal and interpersonal processes, and review the empirical evidence supporting this model. Finally, we discuss research on capitalization in the broader context of relevant literatures, address its theoretical implications, and note unanswered questions for future research.

1.2. Positive and negative processes

Arguably, it is possible that the processes that regulate reactions to negative events are the same as those that regulate reactions to positive events. That is, the sharing of positive events could be linked to the same outcomes as the sharing of negative events, so that responding effectively to positive event disclosures could be comparable to responding effectively to negative event disclosures. Nevertheless, decades of research in several areas of psychology—such as motivation, attitudes, personality, and emotions—suggests that this is not the case. Much research converges on the idea that two independent systems regulate behavior: one involved with rewards or positive situations and the other involved with threats or negative situations. These regulatory systems are often called *appetition* and *aversion*, respectively (e.g., Cacioppo & Gardner, 1999; Carver, 1996; Higgins, 1998; Lang, Bradley, & Cuthbert, 1990; Miller, 1959; Watson et al., 1988).

For example, after reviewing evidence from several literatures, Carver, Sutton, and Scheier (2000) concluded that approach behaviors and positive affect are managed by one regulatory system, whereas avoidance behaviors and negative affect are managed by a separate regulatory system. Empirically, Gable et al. (2003) found support for a two-factor structure—one appetitive and one aversive—across a wide array of personality and individual difference measures (see Fig. 4.1). Others have pointed out that the appetitive and aversive distinction exists across diverse species (e.g., Schneirla, 1959), may be fundamental and innate (e.g., Elliot & Covington, 2001), and is rooted in separate neurophysiological systems (e.g., Harmon-Jones & Allen, 1997; Sutton & Davidson, 1997).

1.2.1. Positive and negative affect

It has been well established that positive affect is separate and distinct from negative affect (e.g., Cacioppo et al., 1997; Watson & Tellegen, 1985). That is, positive emotions are not merely the absence of negative emotions, and

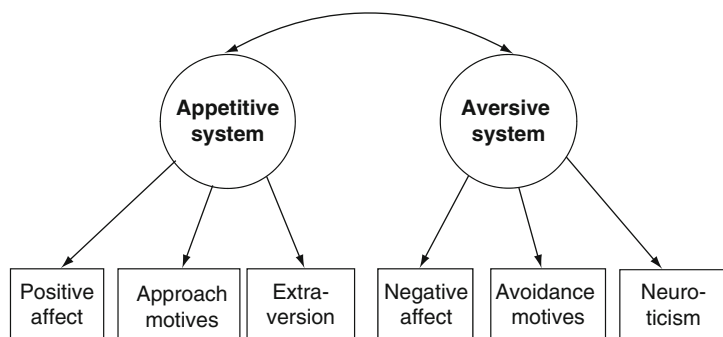


Figure 4.1 Conceptual model of two-factor structure for personality and individual difference measures from Gable et al. (2003).

vice versa. Conceptually, positive emotions are thought to serve a different function than negative emotions. Many theoretical models propose that a major function of negative emotions is to orient people toward threats, dangers, and other environmental problems (e.g., Frijda, 1986; Lazarus, 1991). These negative emotions narrow attention and cognition in order to prepare the person to act in a particular, potentially adaptive way. In contrast, Fredrickson (1998) proposes that positive emotions function to broaden the scope of cognition, attention, and action in order to build resources.

Thus, the very function of positive emotions differs from the function of negative emotions. Naturally occurring positive and negative affect in daily life tend to be only moderately (negatively) correlated (e.g., Diener et al., 1995). Along the same lines, research has also shown that different types of events elicit different sets of emotions (e.g., Gable et al., 2000; Larsen & Ketelaar, 1991; Nezlek & Gable, 2001; Watson et al., 1999). Specifically, the occurrence of positive events is strongly associated with increased positive emotions, such as joy, but not decreased negative emotions, such as anxiety. Moreover, the occurrence of negative events is predominately associated with increases in negative emotions but not necessarily decreases in positive emotions (Gable et al., 2000).

Substantial evidence indicates that positive emotions are linked to health and well-being (for a review, see Lyubomirsky et al., 2005). This link is not explained by the simple absence of or decreases in negative emotion (e.g., Salovey et al., 2000). For example, Pettit et al. (2001) have shown that positive affectivity but not negative affectivity predicts self-reported health. And, in terms of long-term outcomes, Danner et al. (2001) found that expressing positive emotions in written form was inversely predictive of mortality six decades later. These findings echo Harker and Keltner's (2001) finding that facial expressions of positive emotion captured in yearbook photos predicted well-being 30 years later.

Based on this and other evidence, researchers have suggested that for optimal well-being, positive emotions must outnumber negative emotions. For example, Fredrickson and Losada (2005) demonstrated that flourishing individuals experience more positive emotions than negative emotions, with the most advantageous ratio being three positive emotions for every one negative emotion.² Regardless of the optimal proportion of positive to negative emotions, it is clear that positive emotions are distinct from negative emotions, have specific functions, and are independently linked to health and well-being. Thus, understanding responses to the events closely associated with positive emotions (i.e., positive events) presents a research imperative.

² This ratio of positive to negative emotions is quite similar to the ratio of positive to negative events found in daily experience studies in nonclinical populations, discussed earlier (Gable & Haidt, 2005).

1.2.2. Approach and avoidance motivation

Further evidence that processes related to positive events are distinct from those related to negative events comes from research on motivation and goal-directed behavior. Of these two distinct systems, one is involved in approaching rewards and the other is involved in avoiding threats (for a review, see Elliot, 2008). Prominent examples of this work include Carver and Scheier's (1990) and Higgins' (1998) models of self-regulation. Carver and Scheier (1990) describe one goal system in which progress is compared to an internal reference in an attempt to reduce the discrepancy (approach) and other goal system in which progress is compared to an internal reference in an attempt to enlarge the discrepancy (avoidance; Carver, 1996). Higgins' (1998) regulatory focus model is similar in distinguishing a promotion focus, which is directed at the attainment of positive or desired end states, from a prevention focus, which is directed at the evasion of negative or undesired end states.

As in the case of emotion, motivation researchers also postulate that the approach and avoidance motivational systems have roots in different behavioral functions and physiological systems (e.g., Carver, 1996). Indeed, both human and animal studies support the existence of separate neurobiological systems underlying approach and avoidance motivation (e.g., Cain & LeDoux, 2008; Lang & Bradley, 2008). Thus, the physiological circuitry involved in obtaining and responding to rewards differs from that involved in avoiding and responding to threats. We view these findings as further indication that responses to positive rewarding events are not simply the mirror image of responses to negative punishing events.

1.2.3. Appetitive and aversive relationship processes

In no other domain of life is there better evidence of the potential for both benefit and harm than in the domain of close relationships. On the potential benefit side of the equation, comprehensive reviews have consistently found that having positive, supportive social interpersonal ties is associated with better functioning of the cardiovascular, endocrine, and immune systems (e.g., Uchino et al., 1996). Similarly, many studies have shown that having positive close relationships is strongly associated with self-reported happiness and life satisfaction (e.g., Berscheid & Reis, 1998; Diener & Seligman, 2002).

On the potential harm side of the equation, it has long been recognized that relationships can be a major source of distress and misery (e.g., Rook, 1984). For example, relationships characterized by conflict and negativity are associated with deterioration in immune (e.g., Kiecolt-Glaser & Newton, 2001) and cardiovascular function (e.g., Ewart et al., 1991). Berscheid and Reis (1998) concluded that toxic relationships were the greatest cause of life unhappiness. And, relationship difficulty is the most

common presenting problem in psychotherapy (e.g., Pinsker et al., 1985). In short, close relationships can involve both appetitive and aversive processes (Gable & Reis, 2001). Accordingly, research on close relationships reflects both types of processes (although existing research emphasizes aversive processes, as we subsequently address).

Examples of aversive processes studied in close relationships include studies of conflict and the management of negative affect during interactions (e.g., Christensen & Walczynski, 1997). This work demonstrates that toxic patterns of interactions, such as negative affect reciprocity, predict dissatisfaction with and dissolution of relationships (Gottman et al., 1998). An example of research on an appetitive process in close relationships is Aron and colleagues' work, showing that when couples participate in novel-arousing activities together they report increased relationship quality (Aron et al., 2000).

Examining both appetitive and aversive relationship processes is important to understanding close relationships, as suggested in Gable and Reis's (2001) review of the literature. Paralleling research in other areas, appetitive processes characterize behavior, motivation, and affect associated with rewarding aspects of relationships, whereas aversive processes characterize behavior, motivation, and affect associated with threatening or punishing aspects of relationships. Of note here, their model suggests that because appetitive processes are functionally independent of aversive processes, they should predict different intrapersonal and interpersonal outcomes. Thus, the social sharing of positive events is important to investigate, and these relationship processes are likely not to be mirror images of the social sharing of negative events (traditional social support). In particular, capitalization serves different functions, is linked more strongly to different outcomes, and unfolds in a manner distinct from social support.

1.2.4. Differentiating capitalization from related constructs

Systematic examination of capitalization processes is relatively recent, but there are several well-established social-psychological phenomena related to capitalization. It is useful to differentiate capitalization from these other processes, the most obvious of which is social support. Like social support, capitalization can occur when one member of a relationship dyad experiences a personal event that *primarily* affects himself or herself. These personal events differ from events or interactions that take place in the context of a relationship and that involve both members of the dyad (e.g., conflict, transgressions, benefit provision, shared activity). In addition, in both social support and capitalization, the person who experienced the event relates it (directly or indirectly) to the other person; in turn, the other person's response influences the discloser's coping and the relationship between discloser and responder.

Nevertheless, social support and capitalization differ in at least one fundamental way. Successful social support transactions lead to alleviation of negative outcomes, whereas successful capitalization transactions lead to growth of positive outcomes. The literature on the functional distinction between positive and negative emotions reviewed above suggests that this structural difference has several important implications for the individual and the relationship. We discuss these implications in more detail in subsequent sections.

Capitalization processes also overlap with self-evaluation maintenance (SEM) processes (Beach et al., 1998; Tesser, 1988). SEM processes pertain to situations in which one person outperforms another person on self-relevant tasks. People who have been outperformed can experience positive feelings, such as basking in the reflected glow of the successful other. They may also experience negative feelings such as resentment and envy (e.g., Tesser, 1988). According to the SEM model, reactions are determined by a variety of factors including how self-relevant the domain is and the closeness of the two individuals (Tesser & Campbell, 1982). Depending on these factors, people experience either reflection—self-evaluation gains through association with a superior performer—or comparison—self-evaluation losses through perceived poorer performance (Tesser, 1988).

When one person shares news of a positive event, SEM processes may come into play. This would be the case when the positive event involves performance, especially in an area of self-relevance to the responder. However, this situation represents only a small portion of positive events shared. Many shared events have little or no performance–outcome implications, and so reflection is more likely, which facilitates capitalization interactions. When the shared event has implications for the responder’s sense of self-worth, findings from SEM research are incorporated into our model of capitalization.

Finally, capitalization processes intersect with research on positive affect and positive emotions. In fact, we hypothesize that positive emotions are a key outcome affected by capitalization. However, as we discuss, capitalization processes involve mechanisms other than emotions, and have implications for the self and relationships beyond emotions. For example, capitalization attempts and responses influence event perception and evaluation by the discloser, and may alter closeness and propartner behavior. Although positive emotions play a key role in capitalization, other processes are also operative.

1.3. The capitalization process as a novel research area

In our presentation of the research in this chapter, our goal was to establish a foundation for focused examination of positive event sharing. Why have capitalization processes not been studied earlier? In their comprehensive

review, Baumeister et al. (2001) concluded that bad events have more power than good events across a wide variety of outcomes. However, most of the studies they reviewed did not systematically compare positive and negative events (see Footnote 1). Moreover, recent studies have shown that positive processes, such as emotion expression, may have substantial impact over long periods of time (e.g., Danner et al., 2001). These types of long-term longitudinal studies are rare.

Additionally, as is predicted by an independent appetitive and aversive model, positive events tend to be correlated with different outcomes than negative events. Because these outcomes were not included in past studies, their impact may have been overlooked. Furthermore, even if “bad is stronger than good” on an event-by-event basis, positive events occur more often. Whereas any single negative event may have greater impact than any single positive event, positive events may have greater impact *en masse*. Several other methodological factors may also favor aversive processes over appetitive processes in comparative studies (see Gable & Reis, 2001; Rook, 1998 for reviews).

Another reason that positive events may not have been the focus of research until recently was the lack of a theoretical framework for positive emotions. Work spurred by Fredrickson’s (1998) model has, however, advanced understanding of positive emotions and has provided a springboard for several areas of research on positive processes, including capitalization. Indeed, research on positive emotions is not the only area that has seen a surge of interest. Research on positive processes has increased rapidly in the past decade, and although the balance of attention still overwhelmingly favors negative processes, important new areas have been opened to empirical scrutiny (e.g., human strengths, happiness, hope; see Gable & Haidt, 2005). Studies of capitalization are consistent with this general trend.



2. A THEORETICAL MODEL OF CAPITALIZATION PROCESSES

Our description of capitalization focuses on three main elements: capitalization attempts, responses to capitalization attempts, and perceptions of the availability of capitalization support. Capitalization attempts are important because they provide an opportunity for partners to provide (or not provide) a positive, engaged response. When the process unfolds successfully, both personal and interpersonal benefits accrue. Unsuccessful attempts, on the other hand, are likely to have detrimental consequences for the capitalizer and the relationship between the capitalizer and the responder. In this section, we describe the theoretical rationale for this model.

2.1. Positive events influence individual well-being

An extensive literature indicates that life events cause changes in affect and well-being. For example, major life events such as the death of a spouse or unemployment (Holmes & Rahe, 1967; Lucas et al., 2003; Stroebe et al., 1996) have significant, occasionally long-lasting, effects on well-being. However, it is not just major events that have an impact; everyday events also influence affect and well-being. For example, in one study (Bolger et al., 1989), daily hassles and stressors accounted for up to 20% of the variance in daily mood changes. Although most of the available literature has emphasized the impact of negative events, for many of the reasons outlined in the previous section, some researchers have considered the effects of positive events on well-being. In a review of this evidence, Diener et al. (1999) concluded that pleasurable events are associated with increased subjective well-being. For example, achieving an A on an important test has positive ramifications (Seidlitz & Diener, 1993), as do most positive daily events (e.g., David et al., 1997; Gable et al., 2000).

It bears mention that several moderators of these effects have been documented. For example, responses to both major and minor events vary as a function of dispositional variables. Traits such as neuroticism (David et al., 1997) and behavioral inhibition (Gable et al., 2000) may moderate reactions to negative events, whereas extraversion (Larsen & Ketelaar, 1991), agreeableness (Moskowitz & Côté, 1995), and self-esteem (Wood et al., 2003) may moderate responses to positive events. Similarly, Oishi et al. (2007) have documented cross-cultural differences in affective responses to daily events. Nevertheless, over and above these and other moderators, events do influence individual well-being, and more specifically, positive events influence individual well-being.

2.2. Positive events and positive affect

Positive events have clear links to positive affect. Positive affect in turn is associated with success across diverse domains. In a recent review, Lyubomirsky et al. (2005) reviewed evidence about the role of positive affect in successful outcomes for marriage, friendship, income, work performance, and health. They concluded that “happy people are successful and flourishing people” (p. 845), citing substantial evidence supporting a causal interpretation (“happiness causes many of the successful outcomes with which it correlates”) and that these effects “may be mediated...by positive affect and the characteristics that it promotes” (both quotes, p. 846).

Because positive events tend to generate positive emotions, they may also have a broadening effect on the self. Fredrickson's (2001) “broaden-and-build” model proposed that positive emotions broaden people's momentary thought-action repertoires, facilitating the building of personal

resources and social bonds. For example, positive emotions augment “broad-minded coping” (i.e., taking a broad perspective on problems and generating multiple solutions for them), which over time enhances the ability to cope with distress and fosters “upward spirals” in well-being (Fredrickson & Joiner, 2002; Tugade & Fredrickson, 2004). Most relevant to our model, because successful capitalization increases positive affect surrounding positive events, it may contribute to this upward spiral.

Goal striving and attainment represent one class of everyday events in which capitalization interactions commonly occur. Generally, people experience positive emotions when progressing toward valued goals and negative emotions when their progress is thwarted (Carver, 2004; Diener et al., 1999). There is good reason to believe that goal-relevant events are particularly likely to be shared socially. One reason is that people often converse about movement toward their goals, and in such conversations, the partner’s response (interest, disinterest, etc.) has affect-eliciting properties and may influence subsequent goal-directed behavior (Rusbult et al., 2009). Another reason is that relationship partners often play significant roles in goal pursuit (Rusbult et al., 2005). Partners (e.g., friends, family, romantic partners) can support or encourage, or alternatively hinder or discourage, goal-directed activities, especially when the nature of interdependence in a close relationship necessarily involve each partner in the other’s plans, actions, and outcomes (Kelley, 1983).

2.3. Positive events and the self-concept

Personal success and other positive events may also contribute to well-being by fulfilling self-enhancement motives (Sedikides & Strube, 1997). In other words, if people are motivated to enhance the positivity of their self-perceptions, any achievements or events that can be attributed to personal attributes are likely to fulfill that function. In our interpersonal model, the benefits of capitalization go beyond personally reflecting on one’s accomplishments, focusing instead on the value added by telling others and seeing their response. In this, our model of the capitalization process draws directly on theories of the self that emphasize its interpersonal roots.

Early theorists such as Cooley (1902) and Mead (1934) argued that self-evaluation is based on how we imagine that others, especially significant others, evaluate us. More recent theorizing similarly suggests that feedback from others helps shape children’s emerging self-concept, and contributes to adults’ self-concept maintenance and revision (Chen et al., 2006; Markus & Cross, 1990). *Reflected appraisals* are part of this process. Although reflected appraisals become stably internalized as central components of self-esteem over the course of development, they remain at least somewhat open to feedback throughout life (an idea elaborated, albeit in a narrower domain, in Bowlby’s, 1969 notion of working models of attachment). Although much

has been written about the effects of social feedback on self-evaluation, *sociometer theory* (Leary, 2005; Leary & Baumeister, 2000) is particularly relevant to the present model.

Sociometer theory proposes that self-esteem is part of an evolutionarily adaptive system designed to monitor the social environment for cues of acceptance and to respond to changes in perceived relational value. It is widely believed that social acceptance had significant implications for survival and reproduction over evolutionary time (Buss & Kenrick, 1998). According to Leary's model, which has been supported by numerous studies (reviewed by Leary, 2005), self-esteem operates as a gauge of one's current acceptance or exclusion by others and one's perceived value as a relationship partner. Anything that increases one's value as a relational partner will tend to boost self-esteem.

More importantly, the ability of positive events to create such boosts depends on relaying news about the event or attribute in question to those partners and also on the positivity of their response. This is because the perception of an increase in relational value depends directly on feedback from relational partners. In this respect, pride becomes a particularly relevant emotion. Pride has been conceptualized as a marker of social value (Shariff & Tracy, 2009). As such, one reason people express pride is to alert social partners that they have accomplished something that merits increased standing (Tracy & Robins, 2007). Responses to prideful expressions may be one reason why pride over time promotes positive thoughts about the self (Tracy & Robins, 2007).

One seeming exception to this principle occurs in the case of low self-esteem individuals. Several studies indicate that rather than basking in success, persons with low self-esteem are more likely to worry about its potential pitfalls. For example, in three studies, Wood et al. (2005) demonstrated that compared to high self-esteem persons, low self-esteem persons showed no increase in positive self-relevant thoughts following success, but instead were more anxious about the downsides of success (e.g., raised expectations). Likewise, in a more interpersonal domain, low self-esteem persons have more difficulty than high self-esteem persons perceiving and accepting their partners' actual positive regard for them (Murray et al., 2006). Thus, it would be consistent with the literature that people with low self-esteem have more difficulty garnering the positive effects of capitalization than people with high self-esteem. Later in this chapter, we describe studies that address this idea (Smith & Reis, 2009).

2.4. Partner responses to capitalization attempts and the self

For a capitalization attempt to be successful, as mentioned above, the partner's reaction should be perceived as responsive. Perceived partner responsiveness, defined by Reis et al. (2004) as "a process by which

individuals come to believe that relationship partners both attend to and react supportively to central, core defining features of the self” (p. 203), is usually studied in the context of negative events and aversive processes, such as those that operate in the face of stress, unresolved problems, conflicts of interest, disagreeable behavior, threats to the person’s safety or security, or when unsatisfied needs are salient.

Positive situations, although less often studied in this context, also create possibilities for perceived partner responsiveness. This is because conversations about positive events create a situation in which interaction partners may or may not verbally and behaviorally display awareness of, and a willingness to support, the other’s aspirations, goals, values, and accomplishments (Gable & Reis, 2006; Reis, 2007; Rusbult et al., 2005). In social interaction, one person’s positive events have the potential for the other’s ambivalence. For example, a conversation about an important accomplishment may foster envy (Scinta & Gable, 2005; Tesser et al., 1988); it may highlight or amplify conflicts of interest between the self and the partner (Carmichael, 2005); it may threaten stable patterns of interaction (e.g., partners’ relative status or their availability to each other); or it may allow partners to display indifference or distance. Thus, responsiveness in positive situations may be diagnostic of a partner’s regard for the self, just as in negative (conflictual) situations.

Perceived partner responsiveness applies to capitalization attempts in two general ways. The first describes reactions to one partner’s personal accomplishment or stroke of good fortune—winning a prize, achieving a goal, or succeeding at a challenging task. An enthusiastic response is likely to foster interaction sequences in which further positive emotions are shared and experienced (Hatfield et al., 1994; Reis & Gable, 2003; Rimé, 2007), thereby helping to satisfy relatedness needs. Moreover, enthusiastic responses signal that partners understand and appreciate the personal significance of the good news for the teller, and are willing to acknowledge it. A listener’s response also conveys information about his or her feelings for the aspiring capitalizer. Enthusiastic responses suggest that the responder feels some pride, perhaps even wishing to “bask in reflected glory” by including the other’s good news in the self, both signs of interdependence in close relationships (Aron & Aron, 1997). (In Tesser et al.’s, 1988 SEM model, closeness and the tendency to share in another person’s success are positively correlated, as long as the success does not occur in a highly self-relevant domain.) Dispassionate responses, even if nominally positive, signify a lack of personal engagement in the other’s outcome.

Second, partners are often active participants in each other’s personal development and goal pursuit. The *Michelangelo phenomenon* (Rusbult et al., 2009) describes how close partners may promote or inhibit each other’s goal-related behavior through perceptual affirmation and behavioral affirmation, which refer, respectively, to viewing and treating partners in a

manner consistent with their ideal self (Drigotas et al., 1999). Because partners in interdependent relationships must coordinate many basic life activities, and because interdependence usually connotes at least some receptivity to influence by the other, a partner's recognition and encouragement of goal-related activities affects how well a person can pursue personal goals (and thereby individual and relational well-being; Rusbult et al., 2009). Supportive backing generally makes it easier to pursue goals whereas ambivalence, disapproval, or obstruction can interfere with progress. Deci and Ryan (2000) discuss a related process, called *autonomy support*, which they define as the provision of support for self-ascribed needs, values, and goals.

The role of relationship partners in promoting the self's aspirations is a prominent theme in many theories and research areas. For example, Kohut (1971) proposed that beginning in infancy (but continuing throughout adulthood) humans have a need for significant others to affirm the self; in particular to validate intrapsychic attributes that provide meaning and stability to a person's sense of self (Steele, 1988). Kohut used the term *mirroring* to describe the process by which empathic partners express admiration for and engagement with the self. Mirroring, he theorized, facilitates identification with others and a healthy sense of personal worth. More empirically oriented self-psychologists have suggested that mirroring responses, when experienced as such, trigger mental representations of the self as positively valued by the other (e.g., Fonagy et al., 2002). Thus, by monitoring partners' responses to one's own needs, desires, and accomplishments, people develop positive metaperceptions (i.e., perceptions of what others think of the self; Kenny, 1994). Positive achievements and attributes provide compelling opportunities for the provision of mirroring responses, and, when successful, for the perception of partner responsiveness.

2.5. Partner responses to capitalization attempts and close relationships

We theorize that although responsiveness applies in varying degrees across all relationships, it is more likely to be evident and influential in close relationships. First, people expect higher levels of responsiveness from close than distant others (Reis et al., 2004), and thus the presence or absence of appropriate responses to capitalization attempts from them tends to be particularly important. Consistent with this idea, according to friendship norms, friends should share in each other's joys and sorrows (Argyle & Henderson, 1984; Reis, 1990; Rimé, 2009). In addition, closeness, which interdependence theorists define in terms of mutual influence (Kelley, 1983), increases partners' emotional as well as behavioral effects on each other (Berscheid & Ammazalorso, 2001). Finally, if closeness is

characterized as “including the other in oneself” (Aron & Aron, 1997), then close-other feedback might be expected to have an impact on the self commensurate with the degree of closeness.

Many theories and studies document the importance of responsiveness for relationship development and maintenance. For example, communication studies indicate that understanding, acceptance, and support are central to effective communication in ongoing relationships (e.g., Burleson & MacGeorge, 2002; Davis, 1982; Noller & Ruzzene, 1991). Similarly, responsiveness, which goes beyond simple warmth to entail thoughtful appraisal and support of the child’s needs and goals, is considered a central component of good parenting from infancy onward (Dix, 1992). One particular kind of responsiveness, responsiveness to needs, defines the distinction between communal and exchange relationships (Clark & Mills, 1979; Mills & Clark, 1982). In communal relationships, partners feel responsible for each other’s welfare, whereas in exchange relationships, benefits are provided proportionally. Many important relationship phenomena reflect the deepening of communal bonds, including the perceived availability of emotional support, empathic helping, and emotional openness (Clark et al., 2001).

Validation is one component of responsiveness, and its role in relationship development is well documented: All other things being equal, people prefer to affiliate with others who approve of (or who seem likely to approve of) their world view (e.g., Byrne, 1971; Goethals & Darley, 1977; Wheeler, 1974). Moreover, as first proposed by Sullivan (1953) more than half a century ago, validation contributes to the development of intimacy. For example, several studies of Reis and Shaver’s (1988) intimacy model indicate that perceived understanding and validation following self-disclosure signal a listener’s awareness, recognition, and appreciation of the self, which in turn fosters intimacy (e.g., Laurenceau et al., 1998, 2005; Lin, 1992; Reis, 2006). Similarly, one mechanism by which *positive illusions* (perceptions of a partner’s attributes that are more positive than the partner’s self-views) contribute to relationship well-being involves the positive feedback received by the target (Murray et al., 1996; see also Bosson & Swann, 2001). This idea is consistent with the reinforcement tradition in social psychology, which shows that positive feedback may strengthen attraction to the source of that feedback (Berscheid & Walster, 1974).

A final reason to consider the close relationship consequences of perceived partner responsiveness in the context of positive events is found in attachment theory. Although attachment theory is mainly concerned with partner responses in the face of threat, a central tenet of Bowlby’s (1969/1982) original theory is that confident exploration of the environment occurs only when attachment needs have been satisfied. Consistent with this principle, Mikulincer and Shaver (2007) review evidence showing

that secure representations of attachment figures, both chronic and experimentally induced (e.g., by priming), serve as inner resources supporting diverse exploratory or prosocial behaviors. Similarly, more confident, mastery-oriented approaches to achievement situations (an adult version of exploration) are associated with attachment security (Elliot & Reis, 2003). Feeney (2004) provides more direct evidence for this assertion. Using two laboratory tasks (discussion of one partner's future goals, a novel computer puzzle game) and both spontaneous and experimentally manipulated support (responsive or intrusively interfering), she found that responsive support predicted increases in the recipient's personal well-being and self-reported likelihood of goal attainment.

2.5.1. Responsiveness versus control

Enthusiasm for positive accomplishments should be distinguished from more controlling types of feedback. Praise can be construed as informational (providing feedback about competence) or controlling (intended to evoke desired outcomes), and several studies have shown that controlling praise can produce negative emotions and lead to diminished interest in an activity (Deci & Ryan, 1980). Also, self-esteem that is contingent on attaining approval from others tends to be associated with a variety of costs in the domains of learning, motivation, self-regulation, and relationships (Crocker & Knight, 2005; Crocker & Wolfe, 2001; Elliot & Thrash, 2004).

Responsive support in our model is neither controlling nor contingent. Rather, responsiveness, because it is based on understanding and appreciation of the recipient's personally important goals, values, and needs, tends to be experienced as authentic and supportive of the self. It does not evoke external standards or goals so much as it expresses encouragement and appreciation for what already exists in the person's mind. Responsiveness also fosters engagement and involvement, an important component of felt relatedness, whereas controlling feedback typically engenders psychological distance. In short, from the perspective of the recipient whose experiences, goals, needs, and attributes are at issue, responsive feedback tends to be experienced as consistent with autonomous self-regulation.

2.6. A model of the capitalization process

Langston (1994) originally defined capitalization as the process of reflecting on personal good fortune and other positive events, with the aim of deriving enhanced, additional, or more enduring benefits from them. In this original definition capitalization could be an intrapsychic strategy, such as when a person conjures up fond memories of the good news. For simplicity, we have come to use the term capitalization to refer to an *interpersonal strategy*. Moreover, when capitalization strategies are successful, they contribute to a cycle of "broadening and building" (Fredrickson, 2001),

whereby reflection on positive events fosters additional positive affects and the development of personal (and in the interpersonal case, relational) resources. Thus, capitalization experiences should be considered as part of the growing suite of appetitive processes that contribute to human growth and well-being (Gable & Haidt, 2005). We focus on the interpersonal strategy; it is more complex and variable because it takes place in the context of a dyad.

Conveying news about personal good fortune to an interaction partner initiates a process that has both personal and relational implications. Although on the surface capitalization attempts are about the transmission of information about personal events to social partners, the action in these interactions lies in the emotions and interdependence experienced as a result of the exchange. Capitalization interactions possess several important features: What emotions are generated? How does each partner's behavior influence the other's response? What implications are there for the individuals and the dyad? Our model therefore examines this interchange from the perspective of an interpersonal process: How the nature of the interaction influences the prospective capitalizer, the listener, and their relationship.

As shown in Fig. 4.2, capitalization attempts create an opportunity for partners to demonstrate responsiveness to the self in an aspirational context. The end product of this interaction has both personal and relational implications. On the personal side, an effective response is expected to enhance event-related affects and evaluations, whereas an ineffective or destructive response may impair them. Langston (1994) proposed three mechanisms (or, as he referred to them, *marking functions*) underlying the personal benefits of capitalization: to enhance memorability, to maximize the event's personal significance, and to gain value (status) in the eyes of others. Later in this chapter, we review evidence relevant to these mechanisms. In each case, the act of relating one's news to another person, and the resulting feedback provided by a responsive listener, is proposed to generate the "value added" during the capitalization process.

Relational benefits derive primarily from the perception of partner responsiveness, shown in Fig. 4.3. Capitalization attempts are, in a real sense, requests for partners to demonstrate understanding, appreciation,

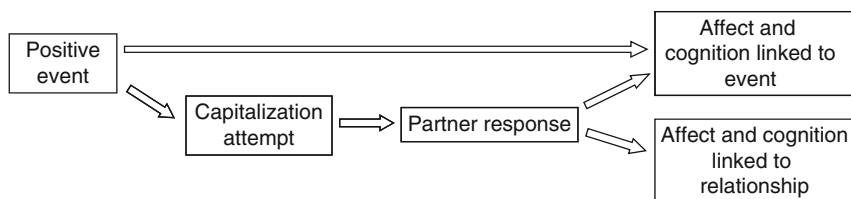


Figure 4.2 Model of positive events and capitalization attempts.

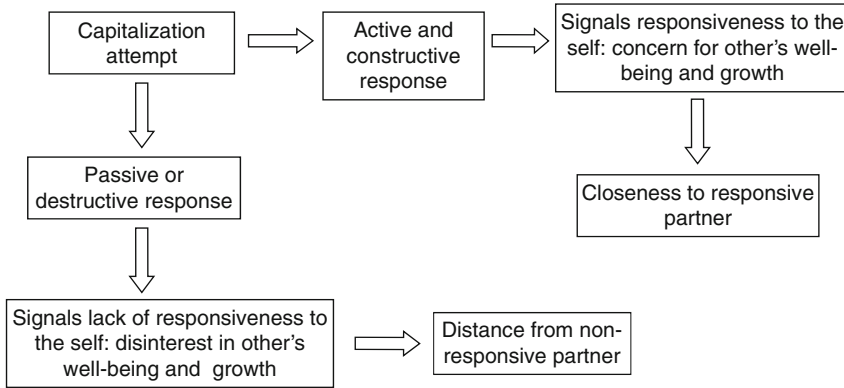


Figure 4.3 Model of responses to capitalization attempts.

and engagement with oneself; enthusiastic or otherwise supportive responses do so, signaling listeners' interest in the capitalizer's growth and well-being. This expression of interest underlies the social resources in capitalization: Responsiveness begets appreciation and caring, and thereby increases the likelihood of reciprocated responsiveness (Reis et al., 2004) as well as other forms of propartner behavior (a process that Rusbult et al., 2006 labeled *mutual cyclical growth*). Propartner behaviors are associated with affective outcomes, such as satisfaction and commitment, and behavioral outcomes, such as trust, accommodation, and the willingness to sacrifice. On the other hand, emotionally disengaged or nonsupportive responses reveal disinterest in the capitalizer's growth and well-being and are expected to create distance and *mutual cyclical deterioration*: a mutually self-perpetuating reluctance to enact prorelational behaviors with the partner. Relevant evidence for these propositions is presented later in this chapter.

3. SHARING POSITIVE EVENTS

3.1. What types of events are shared and with whom?

To determine when and with whom people share positive events, we have conducted several daily experience studies. In our first study (Gable et al., 2004, Study 1), we asked people to briefly describe their best event of the day for 7 days. Events ranged from the mundane (such as receiving a note from a friend or being complimented by a boss) to the seemingly weighty (such as being accepted into graduate school or meeting one's "future spouse"). Over half of the events (57%) concerned social relationships

with family, friends, and romantic partners, about 36% were about jobs or schoolwork, and about 7% fell into the category of health and body (e.g., exercise, sleep, weight).

Participants were also asked how important each event was to them using a continuous Likert-type scale. Finally, participants were asked the extent that they let other people know about this event using a continuous measure in which 1 indicated “not at all” and 5 indicated “very much.” Therefore in this study, we were able to compare no-sharing days to days in which they shared their most positive event by coding a response of 1 as “did not share” and all other responses (2–5 on the scale) as “did share.” We found that participants in this study shared (to some extent) their most positive event of the day slightly more than 70% of the time. Interestingly, social and nonsocial events were equally likely to be shared with others. More important events were shared to a greater extent. However, the average correlation across days between event importance and the continuous measure of extent of sharing was low to moderate (0.26), which indicates that even events of low-relative importance were shared at times, and events of high importance were occasionally not shared.

Similar frequencies of telling positive events were found in a study of 214 undergraduates (Reis et al., 2009, Study 5). These participants provided daily reports online for 2 weeks. Participants told someone about their event about 60% of the time. In this study, they also reported on how “positive” the event was on a scale of 1 (good) to 7 (outstanding) and how “important” the event was on a scale of 1 (not important) to 7 (very important). Consistent with the earlier findings, more positive and more important events were more likely to be related to others.

The frequency of positive event sharing in daily experience studies may seem high, given that prior to these studies the process was rarely investigated. However, related research using different methods has found similar estimates. For example, Algoe and Haidt (2009) asked participants to remember and then describe a time when they got something they had really wanted. They were asked, what, if anything they did as a result of the positive event. Over 80% of participants spontaneously mentioned having told someone else or wanting to tell other people about their event.

These studies do not indicate with whom people are sharing their positive events. Thus, in a subsequent study we focused on this question (Gable et al., 2004, Study 4). For 10 days, we asked people to report on their most positive event of the day and who, if anyone, they told about this event. Specifically, they used a checklist to indicate if they shared the event with a friend, roommate, sibling, parent, romantic partner, or other person. Participants were asked to check all that were applicable. They also indicated the extent that the event itself was due to luck or their own effort.

Again, we found that people shared their most positive event on the majority of days, 80% of the time. Events capitalized on did not differ from

those that were not capitalized on in terms of the extent to which they were perceived to be due to luck or effort. Nearly all (97%) of the people with whom the event was shared were close relationship partners; friends, siblings, parents, roommates, or romantic partners. Only 3% of events were shared with others such as coworkers and acquaintances. This study also replicated our earlier finding that both major and minor events were shared in that there was only a small to moderate (albeit significant) correlation between event importance ratings and the number of people told ($r = 0.17$).

3.2. Sharing events with close others

The finding that positive events were shared almost exclusively with relatively close others confirms our contention that capitalization plays a role not only in intrapersonal processes, such as memory and savoring, but also in interpersonal processes. Moreover, as outlined above, the other person's response is key to understanding outcomes for both the discloser and the relationship between the responder and the discloser (e.g., [Collins & Feeney, 2000](#); [Reis & Shaver, 1988](#)). Thus, just as the response of others during stressful times molds outcomes, the response of others in good times molds outcomes.

Is the reliance on close others in good times incongruous with recent work on the role of attachment processes in social support ([Bowlby, 1973](#); [Hazan & Shaver, 1988](#))? Attachment researchers have typically focused on the tendency for individuals to turn to others to relieve anxiety and other negative emotions, often described as the safe haven function of attachment (e.g., [Collins & Feeney, 2004](#)). These studies have examined normative processes and individual differences in social support seeking and provision in times of stress (e.g., [Collins & Feeney, 2000](#)). [Bowlby \(1988\)](#) also stressed the secure base function of attachment, which describes how attachment figures provide a base from which individuals can explore their environment. Although little work has examined exploration in adults (in contrast to many studies of childhood exploration), based on the distinction between appetitive and aversive process outlined above, it is likely an area ripe for inquiry. Indeed the few studies that have examined attachment-related processes in nonstressful times have found that attachment figures also play an important role in exploration (e.g., [Elliot & Reis, 2003](#); [Feeney, 2004](#); [Green & Campbell, 2000](#)). Sharing positive events is likely one way in which these relationships are maintained.

3.3. Perceptions of reactions: Does reality matter?

A perennial question in research of this sort is whether actual, objective responses matter, or instead, whether it is only perceptions of the partner's behavior that are critical. Of course, perceptions of a partner's

responsiveness are proximal to relationship outcomes, in the sense that actual responsiveness is unlikely to be effective if misperceived by recipients. However, given substantial debate in the literature about the extent to which perceptions of a partner's behavior represent motivated construals (e.g., Murray, 1999), and further, given accumulated evidence that generally finds only modest correlations between provider and recipient reports of social support (e.g., Coriell & Cohen, 1995; see Dunkel-Schetter & Bennett, 1990 for a related review), we briefly address this distinction.

Reis et al. (2004) provide a detailed review of studies providing evidence, on the one hand, for the role of motivated construal and, on the other hand, for the impact of actual support. At least two types of studies support the former position. In the first, personality variables influence perceptions of a partner's responsiveness during social interaction. For example, numerous studies have shown that a quartet of closely related traits predisposing individuals to worry about rejection and a partner's love and regard—anxious attachment, low self-esteem, rejection sensitivity, and reassurance seeking—predict more negative ratings of a partner's availability and support, controlling for ratings of the partner provided by the partner or independent coders (e.g., Downey et al., 1998; Murray et al., 2000, 2003; Simpson et al., 1992). A second line of evidence comes from research showing that people may project the level of responsive feelings they have for their relationship partners onto their perceptions of how responsive those partners are to them (Lemay & Clark, 2008).

On the other side of this distinction are laboratory-based observational studies showing that support perceptions can be traced back to observer-verified behavioral exchanges (e.g., Collins & Feeney, 2000), as well as daily diary studies showing that partners agree to a significant extent about many of their constructive and destructive interchanges (e.g., Gable et al., 2003a, 2004). Furthermore, studies that experimentally manipulate responsive support show appropriately corresponding changes in how that support is experienced (e.g., Feeney, 2004). After reviewing this evidence, Reis et al. (2004) concluded that “both reality and social construction matter—that is, that reports of social support are likely to possess both a kernel of truth and a shell of motivated elaboration” (p. 214). Of note, that review was based largely on studies of conflict-related and social supportive behavior, which, as discussed earlier, may differ meaningfully from responses to positive events. Further research is needed.

3.4. Reactions to capitalization attempts

In our initial pass at investigating reactions to capitalization attempts, we focused on the perceptions the discloser (capitalizer). Of course, as discussed in the preceding section, the actual response and the interpretation of that response are important; however, we viewed the perception of a partner's

reaction as proximal, compared to the partner's actual response, which is more distal. For example, even if an actual response is objectively supportive, it is unlikely to have a concordant impact unless it is also viewed as supportive by the discloser.

The first studies of reactions to capitalization attempts focused on perceptions of how a relationship partner *typically* responds when a positive event has been shared. We began by adapting Rusbult and colleagues' typology of responses to a partner's negative behavior, such as criticisms, snapping, and other relationship transgressions (e.g., Rusbult et al., 1982), known as *accommodation responses*. Their model, which has received extensive empirical support, differentiated responses to a partner's potentially destructive behavior along two independent dimensions: constructive–destructive and active–passive. Constructive reactions to problematic behavior can be either active (e.g., termed *voice*; “he/she talks about what is going on”) or passive (e.g., termed *loyalty*; “he/she gives me the benefit of the doubt and forgets about it”), and destructive responses can be either active (termed *exit*; e.g., “he/she considers breaking up”) or passive (termed *neglect*; e.g., “he/she avoids me for awhile”). Rusbult and colleagues have found that active–constructive responses are positively associated with relationship well-being, whereas both active and passive types of destructive responses are negatively associated with relationship well-being. Evidence for passive–constructive responses is more mixed; in certain circumstances, they are beneficial (although less so than active–constructive responses) but in other circumstances they are unrelated to relationship well-being (Rusbult et al., 1991).

Adopting this framework, we differentiated possible reactions to positive event disclosures. Specifically we conceptualized active–constructive responses as enthusiastic and involved support, passive–constructive responses as quiet or silent support, active–destructive responses as reactions that undercut the event, and passive–destructive responses as reactions that ignore the event. Thus, our conceptualization of possible reactions to capitalization attempts was as follows:

Active–constructive. An active–constructive response is one in which the responder expresses involvement, excitement, or enthusiasm about the positive event. This is often accomplished by asking questions about the event, seeking additional details about the event, elaborating on the possible implications and benefits of the event for the discloser, and commenting on why the event is meaningful to the discloser in particular. The responder often displays or conveys emotions such as interest, happiness, or pride.

Passive–constructive. A passive–constructive response is one in which the discloser perceives a positive attitude toward the event, but the responder says very little or is silent about the event. This may be accomplished through a pleasant but short or quiet exchange. This response differs from the active–constructive response primarily in the responder's level of

involvement. A passive–constructive response does not ask questions about the event, elaborate on its implications for the capitalizer, or comment on the personal meaningfulness of the event to the discloser.

Active–destructive. An active–destructive response is one in which the responder is attentive and involved, but the feedback is negative in valence. This is often done by pointing out negative implications of the event, reframing the event less favorably than the discloser did, and minimizing the event’s significance.

Passive–destructive. A passive–destructive response is one in which the disclosure of the event is minimally acknowledged, if at all. This can be accomplished in one of two ways, both of which convey little or no interest in the event or the implications of the event for the discloser. The responder can either immediately change the subject to discuss something completely different or instead direct the conversation to something that happened to him or her.

Consider the following example. Jay calls his fiancé Cynthia from his software engineering job to tell her that he was promoted to the senior engineer position. If Cynthia provides an active–constructive response it would sound something like this: “That is wonderful news! You have great leadership skills and you will make a wonderful team leader. This means that management recognizes your talent. This is a big step in your career. I am so proud of you. What is your first assignment? Will you be changing offices?” A passive–constructive response would sound something like this: “That’s nice, dear.” If Cynthia provides an active–destructive response it would sound something like this: “Are you ready for that kind of responsibility? You will probably have to work even longer hours. I thought Joe was being considered for that position; he is really talented. I bet there is a lot more paperwork with that position.” Finally, a passive–destructive response would sound something like “Should I pick something up for dinner tonight or do you want to do take out?” or “Wait until I tell you what happened to *me* today?”

3.4.1. Measuring responses to capitalization attempts

To assess responses to capitalization attempts, we created a measure of perceptions of the typical response of another person when a positive event is shared. This measure, called the perceived responses to capitalization attempts (PRCAs), consists of 12 items which were chosen from a larger set based on pilot testing. There are three items assessing each of the four types of responses described above. See [Fig. 4.4](#) for sample items and subscale structure. Participants are asked to consider how “X” responds when “you tell him or her about something good that has happened to you.” Participants then rate the extent to which each of the items describes the typical response of “X.”

	Constructive	Destructive
Active	... my partner usually reacts to my good fortune enthusiastically"	... he/she points out the potential problems or down sides of the good event"
Passive	... my partner says little but I know he/she is happy for me"	... my partner often seems disinterested

Figure 4.4 Sample items from the PRCA (Gable et al., 2004), depicted in terms of the conceptual model of the two dimensions that underlie responses to capitalization attempts. *Note:* Model adapted from Rusbult et al.'s (1991) model of accommodation. PRCA items begin with the stem, "When I tell my partner about something good that happened to me."

The PRCA was first examined in a study of 59 dating couples (Gable et al., 2004, Study 2). Both members of the couple completed the PRCA along with several measures of relationship well-being (e.g., commitment, intimacy). The four subscales of the PRCA showed good reliability with alphas ranging from 0.66 to 0.87. In addition, we found that the active–constructive subscale was negatively correlated with the other three subscales, whereas the passive–constructive, active–destructive, and passive–destructive subscales were positively correlated with one another.

To provide evidence for validity, we examined how the four subscales predicted relationship well-being. The active–constructive subscale was positively correlated with relationship well-being whereas the passive–constructive, active–destructive, and passive–destructive subscales were each negatively correlated with relationship health. (This pattern of correlations is discussed in more detail in a subsequent section.)

Based on these results, we created a composite PRCA scale by subtracting the passive–constructive, active–destructive, and passive–destructive scores from the active–constructive score. The composite score was positively related to relationship well-being. Participants in this study also completed a parallel measure of accommodation (Rusbult et al., 1991). The correlation between the composite accommodation measure and the composite PRCA measure was 0.41 for women and 0.43 for men, indicating that the PRCA partly taps "good relationship behavior" but has considerable unique variance as well.

Typical responses to capitalization attempts were next examined with the PRCA in a study of 89 married couples (Gable et al., 2004, Study 3). Both spouses completed the PRCA in addition to several daily and general measures of relationship well-being. The pattern of correlations in this study was similar to that observed in the previous study, and similar as well for men and women. In addition, we included a standard measure of marital satisfaction and found that the PRCA predicted the daily indicators of relationship health, over and above general satisfaction with a relationship partner.

Perceived typical responses to capitalization attempts have also been examined in parents and children using the PRCA (Cohen et al., 2009). Children reported on their parents' typical reaction to their capitalization attempts and parents reported on their how they typically respond to their child's capitalization attempts. Providing reasonable evidence of convergent validity, parent and child reports on the PRCA were correlated ($r = 0.56$). Not surprisingly, parents' reports of their own behavior were slightly more positive than their children's reports of their behavior.

Finally in another study, we compared PRCA scores to actual behavior (Gable et al., 2006). Couples who had been dating for a minimum of 6 months (average more than 2 years) first completed the PRCA and then participated in positive event disclosure discussions and negative event disclosure discussions (more details on the sample and methods of this study are described in a subsequent section). Each partner took turns disclosing a personal positive event and a personal negative event. Following each discussion the disclosing partner completed a measure assessing how understood, validated, and cared for (responsiveness) they felt. These discussions were also videotaped and the partners' responses in the positive event discussions were later coded for how active versus passive and constructive versus destructive they were.

If the PRCA has discriminant validity, it should relate to postinteraction ratings of responsiveness following discussions of positive but not negative events. As predicted, when both responsiveness measures were included in the regression equation, only the positive event responsiveness ratings were associated with the PRCA. This study also examined convergent validity by comparing participants' ratings of their partners' typical behavior on the PRCA to the partners' observed and coded behavior during the positive event discussion. Controlling for the importance of the event chosen for discussion, the PRCA predicted actual behavior in the laboratory for both men and women. Specifically Gable et al. found that participants who reported their partners were typically more active and constructive and less passive or destructive had partners who behaved in a more active and constructive and less passive or destructive way when participants shared their positive event in the lab.

In summary, the PRCA was designed to measure perceptions of how a relationship partner typically reacts to capitalization attempts. Active and constructive responding are negatively correlated with the three other types of responses, which are positively correlated with one another. In addition, the measure shows good internal reliability and discriminant validity from other measures, and correlates well with behaviors enacted in the laboratory.



4. CAPITALIZATION PROCESSES AND INTRAPERSONAL OUTCOMES

The research in this section describes the association between capitalization processes and outcomes that are primarily intrapersonal. The term “capitalization processes” encompasses both capitalization attempts—the act of relating positive events to another person—and perceived responses to capitalization attempts—the perceived response of the individual being told about the events. Neither predictor includes information about the event itself. Accordingly, when examining capitalization attempts and perceived responses to capitalization attempts, our analyses in most instances control for the importance of the event being capitalized upon. This helps rule out differences in event impact as an alternative explanation for our findings. In some of the studies we describe, perceived responses to capitalization are assessed globally, as a partner’s general tendency to respond in one or another way; in other studies, the perceived capitalization pertains to a particular interaction.

In our first study (Gable et al., 2004, Study 1), 154 undergraduates provided daily reports for 1 week about “the most important positive event or issue of the day” and “the most important problem or stressful event of the day.” Participants were also asked the extent to which they had related each of these events to another person. For control purposes, participants also rated the events on importance and stressfulness. Multilevel modeling, controlling for rated importance of the positive event and stressfulness of the negative event, revealed that capitalization attempts were significantly associated with increases in daily positive affect ($b = 0.20$) and subjective well-being ($b = 0.23^3$). Because these were group-mean centered multilevel equations, individual differences in the predictor variables are controlled and any individual differences in the outcome variable are also controlled. These numbers represent daily increases over one’s level of the dependent variable when the day’s best event is related to another

³ Throughout this chapter, we report the unstandardized coefficients from multilevel modeling procedures as b . They are akin to unstandardized regression coefficients. They represent changes from the intercept on the dependent measure.

person compared to days when it is not. In subsequent analyses, we also controlled for trait levels of neuroticism and extraversion, and the results remained essentially the same.

In a second and similar diary study conducted over 10 days, 94 undergraduates provided daily reports of the most important positive event and most stressful negative event of the day (Gable et al., 2004, Study 4). This study differed from the former one in that participants also reported if they had told at least one person from each of the following categories: friend, roommate, sibling, parent, romantic partner, and other. This was intended as a measure of the diversity of their capitalization relationships. Participants also described the response of the first person they had told, using a 4-item scale that had one item from each of the four PRCA subscales (described earlier). Consistent with the earlier results, telling someone else about the best positive event of the day was associated with higher positive affect and life satisfaction, controlling for positive event importance and negative event stressfulness. Similar results were obtained for the number of people told. Perceived responsiveness also predicted increases in positive affect and subjective well-being, over and above the importance of the positive event, and whether or not the event had been related to at least one other person. Capitalizers experienced significantly better outcomes when the response was perceived to be more active—constructive and less passive or destructive.

We replicated these results in another study of 214 undergraduates (Reis et al., 2009), who for 2 weeks reported on the best event of the day and provided daily reports on a variety of outcomes using a secure website that verified the time of report. Analyses controlled for the positivity/negativity of the best and worst events of the day, the importance of each, and yesterday's report on the outcome variable (so that the dependent variable in each analysis became change from the prior day; Reis & Gosling, 2009). Once again, telling others about the most positive event of the day was associated with higher positive affect. Other similar and significant benefits were found for daily self-esteem and loneliness (i.e., predicting daily fluctuations around the individual's mean over the 14 days), as well as on a new 5-item measure of broadening that encompassed a more open-minded, creative mental focus, consistent with Fredrickson's "broaden-and-build" model of positive emotion. (Sample items were "Today, to what extent did your activities feel creative and 'fresh?'," "Today, to what extent were your energies and attention focused on a narrow set of activities?" [reverse-coded], and "Today, to what extent did you explore new ideas, new activities, or new friendships?")

Two other daily diary studies compared the relative contribution to daily well-being of perceived responses to the retelling of positive and negative events. In one, Gable (2007) had 76 participants keep track of their most important positive and negative events of the day for 2 weeks. Every day they reported whom they told first (if anyone) and how that person

responded. Responses to positive events were described on a 4-item version of the PRCA scale, with one item for each of the four styles. Responses to negative events were assessed with items from Barbee and Cunningham's (1995) measure of responses to social support attempts, with one item for each of four responses—solve, solace, dismiss, and escape. Multilevel analyses simultaneously entering responses to both positive and negative events (and again controlling for the importance of the events in question) demonstrated that the capitalization composite significantly predicted improvements in daily positive and negative affect, life satisfaction, and feelings of acceptance, whereas the social support composite did not. A second study by Gable and Maisel (2009; see also Maisel & Gable, 2009) was a daily diary study with 67 cohabiting couples (ranging in age from 19 to 56), examining personal well-being on days in which partners were perceived to be responsive (or unresponsive) to days in which events were not discussed with partners (which we refer to as *baseline*). This study thus examined these processes not only within-person but also within-partner, because it was based on differences in the same partner's responsiveness. As shown in Fig. 4.5A and B, participants fared better than baseline when partners were perceived to be responsive to positive event disclosures (represented in Fig. 4.5A as less sadness) and lower than baseline when partner responses to negative event disclosures were felt to be unresponsive (represented in Fig. 4.5B as more sadness).

Daily diary studies have the substantial advantage of minimizing certain biases that are common in global retrospective measures, such as recall (Reis & Gable, 2000). Nevertheless, global measures can be useful in describing broad trends. Several such studies have provided results consistent with the daily experience findings. For example, in a study of 89 married couples (described earlier; Gable et al., 2004, Study 3), scores on the PRCA were significantly positively correlated with overall positive affectivity and subjective well-being for both husbands and wives (0.26, 0.45, 0.36, and 0.31, respectively). Similarly, in two samples of 84 and 89 college undergraduates, the total PRCA capitalization score correlated significantly with the Satisfaction with Life Scale ($r_s = 0.24$ and 0.35 , both $p < 0.05$).

The benefits of perceived positive responses in capitalization situations have also been found with regard to parents. Cohen et al. (2009) administered the PRCA scale to a sample of 94 undergraduates, asking them to describe a parent's typical response to good news. As in the prior studies, students' PRCA scores were associated with significantly higher positive affect and life satisfaction, and significantly lower negative affect.

In sum, these studies indicate that both the act of telling others about personal good fortune or the best thing that happened during the day and perceiving their responses to be enthusiastic are associated with personal well-being.

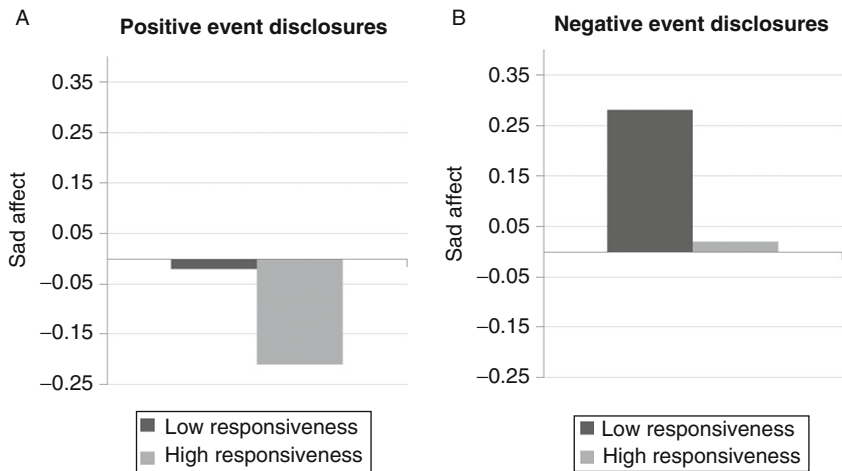


Figure 4.5 (A) Daily sadness depicted as a function of whether partner's reaction to disclosure of a positive event was more or less responsive than their average reaction to positive event disclosures. Baseline is days in which no positive events were experienced and discussed. Low responsiveness days significantly differed from baseline and high responsiveness days, $p < 0.05$ (from Gable & Maisel, 2009). (B) Daily sadness depicted as a function of whether partner's reaction to disclosure of a negative event was more or less responsive than their average reaction to negative event disclosures. Baseline is days in which no negative events were experienced and discussed. Low responsiveness days significantly differed from baseline and high responsiveness days, $p < 0.05$ (from Maisel & Gable, 2009).

4.1. Mechanisms

4.1.1. Maximizing

Earlier, we mentioned two intrapersonal mechanisms proposed by Langston (1994) to contribute to the benefits of capitalization: maximizing the event's value and memorability. We have examined the first of these in two laboratory experiments and one daily diary study. Capitalization interactions help increase the event's value by providing feedback from valued others about the event's significance. As described in the theory section of this chapter, this feedback provides validation about the event itself, as well as signifying the recipient's valuing of the person. These should boost the perceived value of the event in question.

Reis et al. (2009, Study 1) used an experimental paradigm with previously unacquainted persons to examine this hypothesis for two reasons. First, experimentation allowed manipulation of responses to create conditions that facilitated comparison of our interpersonal process model with alternative explanations. One of these alternative models suggests that capitalization experiences elevate positive affect in a very general way,

rather than specific to the focal events. Second, we employed unacquainted persons because responses are substantially more difficult to manipulate within existing relationships, given that partners have relatively stable expectations of each other based on history.

In these experiments, participants were first asked to describe and rate the three best things “that have happened to you in the past two years.” Participants did so by placing an “X” along a horizontal line with anchors at the beginning (“pretty good”), middle (“great”), and end (“the best thing that ever happened to me”). We randomly selected either the second- or third-most positive event and then asked participants to spend about 8 min describing it to an interviewer who had been trained to respond enthusiastically and supportively. (For example, the interviewer smiled, made eye contact, used a lively tone of voice, and said things like “Your friends must be really proud of you.”) After these conversations, participants again rated all three of their best-in-two-years events. (This rating scale prevented participants from recalling their initial responses when completing the second rating.)

As shown in Fig. 4.6, Reis et al. (2009, Study 1) found that ratings of the event discussed increased significantly more than ratings of the event not discussed. This supports the idea that capitalization interactions increase the perceived value of events; if the outcome of capitalization interactions was a generalized mood effect, then ratings of both events should have increased comparably. Moreover, the effect in this condition differed significantly from three control conditions in which participants also rated and then rerated their best-in-two-years events. In one condition, participants spent about 8 min writing an essay, describing their thoughts and

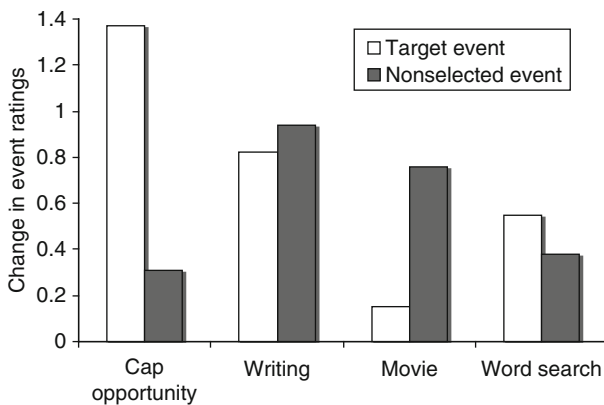


Figure 4.6 Change in ratings of events before and after randomly assigned activity (from Reis et al., 2009, Study 1).

feelings about the target event. This kind of expressive writing can help people cope with traumatic events (Frattaroli, 2006; Pennebaker, 2003) and requires a similar amount of attention focused on the target event as in the capitalization interactions. In a second control condition, participants watched a humorous clip from the film, *Austin Powers—International Man of Mystery*, to see if similar results might be obtained from generally being in a good mood (Fredrickson, 1998). The final control condition involved doing word-search puzzles. As Fig. 4.6 shows, none of these conditions yielded differential increases favoring the event discussed over the event not discussed, indicating that the act of recounting positive events with an enthusiastic listener is responsible for the benefits of capitalization.

In a second experiment, we asked whether capitalization depends on an active–constructive response from the listener. Reis et al. (2009, Study 2) compared the capitalization condition from the prior experiment (in which the listener was enthusiastically engaged with the participant, as described earlier) with another condition in which the listener adopted a more passive, disengaged (but not hostile) orientation. For example, throughout the participant’s recounting, the listener slouched and fidgeted, mostly avoided eye contact, maintained a steady and fairly dry tone of voice, and said things like, “Oh yeah, that’s nice.” Enthusiastic listening again led to a larger differential gain for ratings of the chosen event over ratings of the non-chosen event. In the passive confederate condition, the reverse occurred: Ratings of the nonchosen event increased more than ratings of the chosen (and discussed) event. This result dovetails with research showing that inattentive, distracted listening but not attentive, responsive listening may undermine the likelihood of finding personal meaning in oral narratives (e.g., Pasupathi & Rich, 2005).

We also tested this hypothesis in a daily diary study involving 214 undergraduate students (Reis et al., 2009, Study 5). For 14 consecutive evenings, participants were asked to log on to the study website before going to bed and to answer questions about the events of the day. Included in this survey were questions asking them to describe, in a single phrase or sentence, “the best thing that happened to you today” and the day’s “worst problem or concern.” Immediately afterward, participants rated those events for positivity or negativity and for importance. They also reported if they had told anyone about each of these events, and if they had, how the other had responded. Later, between 1 and 3 days after the final diary, participants returned for a laboratory session in which they were given a list of the 14 positive and negative events they had reported during the diary portion of the study. (Participants had not been forewarned about this.) They were asked to rate each event according to how positively (or negatively) they felt about the event “now.”

Consistent with the above experimental evidence, we expected higher “postcasting” ratings for positive events that had been discussed, relative to positive events that had not been discussed. We also expected that enthusiastic responses would be associated with increased postcasting. Hierarchical linear modeling (Raudenbush & Bryk, 2002) was used to test these hypotheses, controlling for positivity and importance ratings of the events provided on the days in which they occurred. As predicted, postcasted ratings of positive events were significantly more positive if those events had been related to another person, $b = 0.15$, $p < 0.02$. Also as predicted, on days an event was shared, postcast ratings of positive events increased if partners’ responses had been perceived as enthusiastic, $b = 0.06$, $p < 0.001$. Relating negative events to others did not significantly affect later ratings, $b = 0.09$, ns. However, the listener’s perceived supportiveness was significantly associated with more negative ratings, $b = 0.11$, $p < 0.005$, suggesting that supportive responses may have validated and magnified participants’ views of how bad those events had been.

In sum, these three studies provide evidence for one of the mechanisms believed to underlie the positive outcomes associated with capitalization, namely that relating good news to others, and perceiving an enthusiastic response, increases the perceived value of those events.

4.1.2. Memorability

Enhanced memorability provides a second mechanism for the long-term benefits of capitalization. According to this explanation, because the act of conversing about a personal positive event is likely to entail rehearsal, reliving, and elaboration, it may increase the event’s salience and accessibility in memory, and hence its impact on personal well-being. On the other hand, when people relate their negative events to others, the goal is more likely to be “getting it off their chests,” purging the event or at least minimizing its impact. Thus, capitalization on positive events can be expected to enhance memorability in a way that seeking support for negative events may not.

Gable et al. (2004, Study 4) evaluated this hypothesis in a 10-day daily diary. Ninety-four undergraduates completed daily reports that included questions about the most positive and most stressful events of the day. As in prior studies, the booklets also included questions about whom they had told about those events and ratings of event importance. The day after the last diary report, participants came to a laboratory session in which they received a “pop quiz,” asking them to list from memory as many as possible of the positive and negative events from their diaries. Two independent coders then compared these lists to the actual reports, with 89% agreement. (Discrepancies were resolved by a third coder.)

On average, participants recalled 58.9% of their positive events and 51.9% of their negative events. Hierarchical linear modeling was used in these analyses with the Bernoulli model for dichotomous outcomes (that day's event recalled or not recalled), again controlling for the importance (or stressfulness) of the event. For positive events, participants were more likely to recall events when they told more people about that event, $b = 0.19$, $p < 0.05$. For negative events, the extent others were told about the event did not relate significantly to memory, $b = 0.08$, ns. Thus, capitalization attempts increase the memorability of events, whereas support attempts for negative events do not.

4.2. Coping with good news

These findings suggest that it may be appropriate to view positive events as a “coping” opportunity. Coping, usually defined in terms of managing the demands of a stressful event, may be conceptualized as part of a larger process of self-regulation (Folkman & Moskowitz, 2004). Recent research suggests that coping processes go beyond the description of strategies for alleviating distress; positive outcomes—such as finding meaning, perceiving benefits, and experiencing positive emotions—are also commonplace (see Folkman & Moskowitz, 2004 for a review). If so, coping might be considered as an umbrella term for the diverse self-regulatory processes that are involved in responding to significant events. Like stressful events, positive events have the potential to affect individual well-being (positively, as opposed to negatively in the case of stressful events), but their eventual impact depends to a meaningful extent on what the individual does with the event, given that it has occurred. This might be considered part of a pallet of coping strategies.

Capitalization attempts represent one of these coping strategies: The individual pursues a response from others that will enhance or prolong the benefits of the positive event. Thus, capitalization attempts are similar in focus to the better-known and more extensively studied process of social support seeking (pursuing help or comfort from others to assuage distress), in that both involve recounting one's circumstances to another (anticipated to be) responsive person. In both instances, when these attempts are successful, they have personal and intrapersonal benefits; when unsuccessful, they have corresponding costs. But capitalization and social support seeking differ in at least one key respect: Whereas social support is hoped to resolve or otherwise minimize the impact of events, capitalization attempts are intended to maximize their impact. It may be fruitful, then, to consider both capitalization attempts and support seeking as coping strategies aimed at moderating the impact of events through social feedback.

5. CAPITALIZATION PROCESSES AND INTERPERSONAL OUTCOMES

Our model proposes that capitalization processes are linked not only to the intrapersonal outcomes described in the previous section but also to interpersonal outcomes. The research described in this section focuses on the association between capitalization processes and outcomes that are primarily social or interpersonal. Again, we will examine both capitalization attempts and responses to capitalization attempts (both typically and in response to specific exchanges) as predictors.

Paralleling findings from our studies of personal outcomes, on days people tell another person about a positive event they also experience increases in the quality of their close relationships. In one study, 76 participants reported on their most positive and negative event of the day (Gable, 2007). Participants indicated whether they had related those events to anyone and also completed a measure of acceptance. The measure of acceptance was straightforward: Participants simply indicated whether they felt more, less, or the same level of acceptance by members of their social networks. Multilevel modeling showed that on days people told at least one other person about their positive event, they felt significantly more accepted by others than they did on days they did not ($b = 0.10, p < 0.05$). Interestingly, telling at least one other person about the most negative event of the day was not significantly related to feelings of acceptance.⁴

In another daily diary study of 67 cohabiting couples (average length of cohabitation was 1.8 years, 24% were married), Gable & Maisel (2009) examined whether outcomes specific to a particular (romantic) relationship were associated with telling that partner about a positive event. On days participants reported telling their partner about a positive event, they also reported feeling significantly greater connection to their partner and security in their relationships ($bs = 0.19/0.28$ and $0.19/0.21$,⁵ respectively, $ps < 0.01$).

Our model proposes that capitalization attempts alone do not account for interpersonal benefits. The response of the person with whom the event is disclosed should also account for significant variability in close relationship outcomes. Our first study in this regard focused on typical responses as assessed by the PRCA (Gable et al., 2004, Study 2). In this study, both members of 59 dating couples completed the PRCA and several measures of relationship health, including satisfaction, commitment, intimacy, and trust.

⁴ Note that although not significant, the coefficient was negative ($b = -0.05, p = 0.21$), indicating that if anything people felt *less* accepted on days they shared a negative event with at least one other person. This is further evidence for the difficult to resolve paradox that actual social support is sometimes not beneficial or even detrimental.

⁵ Unstandardized bs reported separately for days in which only the participant reported telling a positive event and days in which the participant and the partner reported that the participant talked about a positive event.

Results showed that the active–constructive subscale was positively correlated with relationship outcomes, whereas the other three subscales (passive–constructive, active–destructive, and passive–destructive) were negatively correlated with relationship outcomes. In particular, the PRCA composite score (active–constructive minus the other three subscales) was significantly correlated with satisfaction, intimacy, and trust for both men and women (r s ranged from 0.40 to 0.70), and marginally correlated with commitment for men and women (r s = 0.28 and 0.23). To assess whether these correlations reflected something unique about responses to positive events (and not global patterns of responding to all situations), we recomputed these correlations controlling for perceptions of how a partner responds to negative behaviors, known as *accommodation* (Rusbult et al., 1991). The pattern of correlations between relationship quality and the PRCA composite score remained essentially the same.

Associations between perceived typical responses to capitalization attempts and relationship well-being were also examined in a married sample (Gable et al., 2004, Study 3). Eighty-nine married couples recruited from the community (as described earlier) completed the PRCA, and measures of intimacy (the PAIR; Shaefer & Olson, 1981) and global marital satisfaction (Quality Marriage Index; Norton, 1983). Both spouses then participated in a 2-week daily diary study in which they independently reported their daily satisfaction, experiences of daily conflicts (major and/or minor), and daily positive activities (doing something fun and/or doing something relaxing).⁶

Results showed that the higher participants rated their spouses on typical responses to capitalization attempts (the PRCA composite score), the more intimacy they reported overall and the more satisfied they felt in their relationships on a daily basis (r s ranged from 0.39 to 0.50, p s < 0.05). In addition, PRCA composite scores were also significantly negatively correlated with reports of daily conflict (−0.23 and −0.34, p s < 0.05, men and women, respectively) and positively correlated with reports of engaging in positive activities (0.26, p < 0.05 and 0.20, p < 0.10, men and women, respectively). In addition, we computed partial correlations controlling for global marital satisfaction to rule out the possibility that the observed correlations were due to general positivity about the relationship. When global marital satisfaction was controlled, the results remained essentially the same. An important advantage of this study is that PRCA and outcome scores were collected at different times, with different methods, minimizing artifacts due to method commonality. In sum, results from this

⁶ Couples engaged in some category of conflict (major or minor) on 21.3% of the days and some form of positive activity (fun or relaxing) activity on 40.1% of the days. Moreover, agreement between husbands and wives on whether these events occurred was quite high, ranging from 75% to 97% of the time across different categories of events.

sample of spouses showed that people who perceive their partners to typically be active–constructive and not passive or destructive when they make capitalization attempts have higher relationship quality overall and on a daily basis than people who perceive their partners to be less active–constructive and more passive or destructive.

Bermis (2008) reported similar results in a study of 101 dating or cohabiting couples. In her study, couples completed the PRCA along with a battery of relationship measures. The PRCA composite score was significantly correlated with measures of relationship quality, intimacy, trust, commitment, and responsiveness, for both men and women (r s ranged from 0.32 to 0.55, $ps < 0.05$). Moreover, active–constructive responding was consistently and positively correlated with relationship outcomes whereas the other three forms were again negatively correlated with relationship outcomes, for both men and women. The PRCA also predicted breakups at a 3-month follow-up: Intact couples had significantly higher PRCA scores in either partner's report than broken-up couples.

To get a better understanding of perceived responses to capitalization attempts, Gable et al. (2006) conducted an observational study of 79 heterosexual couples, all of whom had been dating for a minimum of 6 months (average dating time was 25.1 months; 43% cohabiting). Both partners independently completed the PRCA and several measures of relationship quality—satisfaction, commitment, and passionate love. All three measures were highly correlated and loaded on one factor; therefore, they were summed into a composite measure of relationship quality. Couples then participated in a series of videotaped interactions. Each member of the couple discussed a personal positive event (capitalization condition) and a negative event (social support condition), counterbalanced by condition and gender. Following each interaction, the disclosing participant completed measures of how understood, validated, and cared for they felt (perceived responsiveness; Reis et al., 2004). Finally, participants were contacted 2 months later to determine their relationship status (together or broken-up) and to complete the same relationship quality measures.

Results of this study replicated prior studies. The composite PRCA measure was significantly correlated with relationship outcomes at Time 1, $r = 0.41$ for both men and women. In addition, PRCA scores at Time 1 were significantly correlated with Time 2 relationship quality scores for both men and women. PRCA scores also differed in couples who dissolved their relationships before the 2-month follow-up. As shown in Fig. 4.7, participants' ratings of their partners' typical capitalization responses at Time 1 were lower in the dissolved couples than in the intact couples. In sum, perceptions of how a partner typically responds to capitalization attempts were associated with concurrent and future relationship quality and relationship stability.

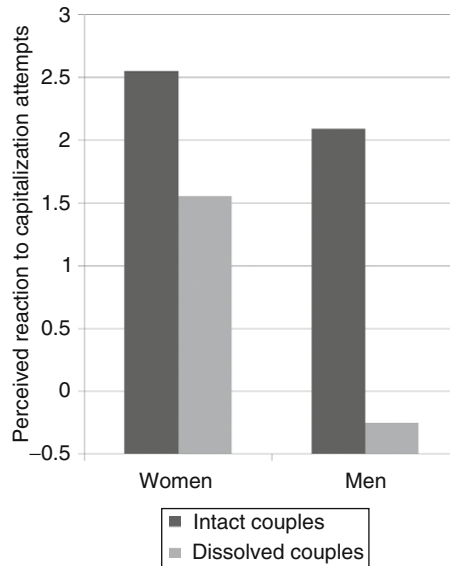


Figure 4.7 PRCA composite scores (range from -3.22 to 6.00) of participants describing their partners' typical reactions to their capitalization attempts as a function of whether the couples were intact or broken up 6 months later. The two groups differed, $p < 0.07$ for women, $p < 0.05$ for men (Gable et al., 2006).

5.1. Actual behavior

Trained coders rated the behavior of responders during their partner's positive event disclosure on two dimensions: passive to active and constructive to destructive.⁷ Specifically, for the passive to active rating, coders rated the responding partner's behavior using a scale of from 1 (extremely passive) to 7 (extremely active). For the constructive to destructive rating, coders rated the responder's behavior on a scale ranging from 1 (extremely destructive) to 7 (extremely constructive). Prior to completing the ratings, coders were provided examples of behavior at each level on the scale and completed training ratings of behavior. A composite behavioral rating was made by summing these two scores such that higher numbers indicated more active and constructive scores and lower numbers indicated more passive or destructive scores. Higher ratings of the responder's behavior (i.e., more active and constructive responses) were associated with significantly higher postinteraction ratings of perceived responsiveness by disclosers. These results dovetail nicely with previously described results. That is, just as

⁷ Scores on the two dimensions were uncorrelated for ratings of both males' and females' behavior ($r_s = 0.06$ and 0.02 , $p > 0.60$).

typical response patterns are associated with global and daily relationship outcomes, responses to particular capitalization attempts predicted postinteraction relationship quality.

In addition, observed behavior during the videotaped interaction predicted future relationship quality and relationship stability. When responders reacted in a more active–constructive way in the laboratory session, their partners reported higher relationship quality on the follow-up measures 8 weeks later.⁸ Moreover, couples in which the women were rated as less active and constructive during the interaction were significantly more likely to be broken up 8 weeks later (ratings of men's responses did not predict breakup).

5.2. Experimental studies

Thus far the studies of interpersonal outcomes described have been correlational. Although these studies have included longitudinal analyses, observations of behavior in the laboratory, and partialling of potential confounds, the power of experimental manipulation and random assignment to conditions would further support the model. We have conducted several experiments focused on relationship outcomes. One experiment (Strachman & Gable, 2007) involved 84 participants who arrived at the laboratory with their romantic partners from whom they were immediately separated so that participants completed the study independently.⁹ All participants were led to believe that they performed extremely well on a difficult task and that their partner knew of this extraordinary performance. Participants then received an e-mail ostensibly from their partner. In fact, the e-mail was randomly chosen from one of four messages created by the experimenters. Participants either received an active–constructive e-mail (which expressed pride and enthusiasm for the performance), a passive–constructive response (which conveyed knowledge of the performance and a smiley face emoticon), an active–destructive response (which undermined the performance), or a passive–destructive response (which did not comment on the performance). Participants were then permitted to respond to their partner with their own e-mail. These return e-mails were coded for positive feelings of love, appreciation, and happiness. As predicted, participants in the active–constructive condition expressed significantly more positive sentiments (means = 1.75 for women and 1.25 for men) than participants in the other three conditions combined (means = 0.60 for women and 0.55 for men).

⁸ For women, there was an interaction such that when they discussed an important event and their partner did not respond in an active constructive way, they reported lower relationship quality. If they discussed less important events this pattern did not emerge.

⁹ The cover story for this study was that the experimenters were interested in multitasking, specifically completing difficult tasks while interacting with relationship partners. All participants were told they were assigned to e-mail-contact condition.

In another experiment, 48 dating couples participated in a week-long daily experience study (Gonzaga et al., 2009). All couples were instructed to take turns discussing their most important personal positive event of the day and then independently and privately record their positive and negative feelings. Prior to the week-long study however, couples had been randomly assigned to an experimental or control condition. Couples in the experimental condition received verbal and written instructions from the experimenter regarding active–constructive responses. They also watched a video of actors engaging in different types of responses. These couples were instructed to try to respond to their partners in an active–constructive manner. Couples in the control condition received no information and no instructions. Results indicated that couples in the experimental condition reported significantly more positive feelings (e.g., love) and significantly less negative feelings (e.g., contempt) toward their partner following nightly interactions than those in the control condition.

Another experiment was designed to examine closeness and liking in previously unacquainted dyads (Reis et al., 2009, Study 3). In this study, confederates interviewed participants about an important positive event (similar to Reis et al., 2009, Study 2, described earlier). Confederate interviewers responded in either an active–constructive manner (asked questions, expressed interest and enthusiasm) or a passive–constructive manner (i.e., took notes but said little). A third condition created a fun interaction that obviated potential responsiveness—participants described Dr. Seuss pictures while the confederate, who could not see the pictures, attempted to draw them (based on Fraley & Aron's, 2004, task). At the end of the study and again 1 week later, participants indicated their enjoyment of the experience and their feelings toward the interviewer. Results are shown in Fig. 4.8. As expected, at both time points both the active–constructive capitalization and fun interaction control condition led to more liking for the interviewer than the passive–constructive condition. But the active–constructive capitalization condition led to significantly greater felt closeness, perceived responsiveness, trust, and willingness to self-disclose than the two other conditions (which did not differ significantly from each other).

A final experiment (Reis et al., 2009, Study 4) was designed to examine prosocial behavior toward responsive listeners in an anonymous field setting. In this experiment, participants were approached on a campus street by an interviewer who asked them to describe the best thing that had happened to them in the past few years. The experimenter responded with one of four scripted responses: *enthusiasm* (e.g., “that’s really great!”), *disparagement* (e.g., “what’s so positive about that?”), *neutrality* (e.g., “thank you, now let’s move on”), and a *positive mood condition* (offering a piece of candy) to compare the effects of capitalization with positive moods. Participants were then surreptitiously given an opportunity to do something nice for the experimenter by returning an accidental overpayment for

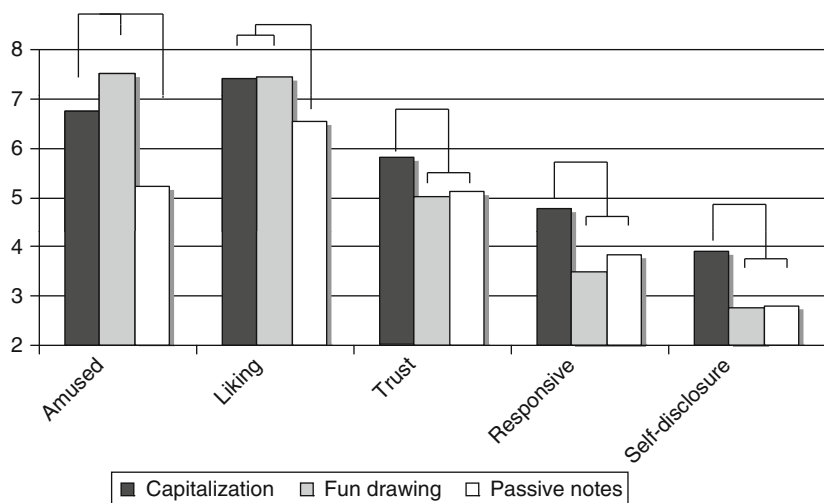


Figure 4.8 Results of ANOVA comparing three experimental groups. Bracketed means do not differ significantly at $p < 0.05$ (Reis et al., 2009, Study 3).

participation. As predicted, participants were significantly more likely to return the accidental overpayment in the capitalization condition (68%) than in the disparagement (36%), neutral (48%), or candy (51%) conditions.

5.3. Mechanisms

5.3.1. Perceived responsiveness

As shown in Fig. 4.3, a key mechanism mediating between responses to capitalization attempts and interpersonal outcomes is perceived responsiveness. Our model postulates that reactions to capitalization attempts will be positively associated with relationship health to the extent the discloser perceives that the partner understands, validates, and cares for “core ... features of the self.” (Reis et al., 2004, p. 203). As described earlier, when responders provide an active–constructive response they display interest in or recognition of why *that particular event* is important to *that particular discloser*. This in turn demonstrates intimate knowledge of the discloser or alternatively a desire to better understand the discloser. Second, showing interest in the event, such as by asking questions and expressing joy over it, conveys that the responder sees the event itself as significant, either presently or in its future value. This validates the perspective of the discloser who chose to share it. Finally, the responder’s positive regard conveys engagement and emotional investment in the relationship, both signs of caring and concern for the discloser’s welfare. Thus, the three critical elements—understanding, validation, and caring—that constitute perceived responsiveness

(Reis & Shaver, 1988) are conveyed with active–constructive responses to positive event disclosures.

We speculate that capitalization may provide a context that more easily allows the responder to effectively convey responsiveness than traditional social support interactions. This is because the act of seeking social support may increase the distress of the support seeker beyond the negative event itself. Existing evidence suggests that the receipt of support for negative events may lower self-esteem (because the self appears inadequate) or draw more attention to the problem (e.g., Bolger & Amarel, 2007; Bolger et al., 2000). Increased attention to the needs of the self may impede personal well-being, as well as leading to feelings of resentment and indebtedness (Shrout et al., 2006). Ironically, receiving support may also validate negative feelings about negative events, also diminishing personal well-being (Reis et al., 2009). These experiences may negate, diminish, or mask the interpersonal benefits of perceived responsiveness. The capitalization context, in contrast, is uniformly positive and therefore does not involve these added risks.

We have already reviewed evidence from several studies supporting the proposition that perceived responsiveness is associated with active–constructive responses to capitalization attempts. Additionally, Gable et al. (2006) found that responders' active–constructive behavior (as coded by trained observers) during laboratory interactions was positively correlated with disclosers' postinteraction ratings of perceived responsiveness. Furthermore, perceived responsiveness during the positive interaction was significantly and positively associated with concurrent relationship quality for men and women and future relationship quality for women. Perceived responsiveness during the negative event discussion was not related to current or future relationship quality for either men or women and was only related to concurrent relationship quality for women. Thus, consistent with the idea that the capitalization context may more easily allow intimacy processes to unfold than the traditional social support context, we found that perceived responsiveness was more consistently and robustly associated with relationship quality in the former.

Gable and Maisel (2009) directly tested the hypothesis that perceived responsiveness predicts the interpersonal benefits of capitalization responses. In the daily diary study with 67 cohabiting couples, described previously, they compared days in which partners were perceived to be more and less responsive to their capitalization attempts to days in which positive events were not discussed with partners. As shown in Fig. 4.9, feelings of connection to the partner were significantly lower on days in which the partner was perceived to be lower than average in responsiveness than on the baseline days (days with no positive events disclosed to the partner). Also, connection to the partner and security in the relationship were higher than baseline when partners were perceived to be higher than their average in

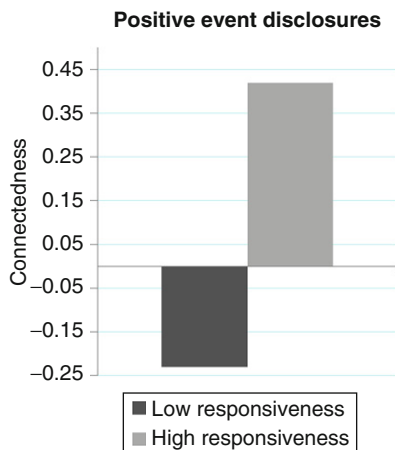


Figure 4.9 Daily feelings of connection to partner depicted as a function of whether partner's reaction to disclosure of a positive event was more or less responsive than their average reaction to positive event disclosures. Baseline is days in which no positive events were experienced and discussed. Low responsiveness days significantly differed from baseline, high responsiveness days, and high responsiveness days significantly differed from baseline, $ps < 0.05$ (from Gable & Maisel, 2009).

responsiveness. Reis et al. (2009, Study 5) reported a similar finding. In this study, described earlier, 214 college students completed daily diaries for 2 weeks. Included in their measures were questions about how a target person (someone with whom they had a meaningful relationship and interacted regularly) had responded on that day to their capitalization attempts. On days in which the target was perceived to be more responsiveness, participants reported a stronger prosocial orientation to the target (defined as a willingness to sacrifice, to be nice, and to accommodate to the partner's bad behavior).

5.3.2. Positive emotions

As reviewed in the prior section on intrapersonal outcomes, capitalization attempts and enthusiastic responses to them are strongly associated with positive affect. Positive emotions in turn play a role in the receipt of interpersonal benefits. This prediction is based on the *broaden-and-build* model, in which Fredrickson (1998, 2001) proposes that the experience of positive emotion alters cognition and behavior by broadening the individual's thought-action repertoire. This broadening increases the available number of ways a person can respond to the environment, which is reflected by outcomes such as increased creativity and broad-minded coping (e.g., Fredrickson & Branigan, 2005), and which are thought to increase both personal and social resources over time. We believe that the positive

emotions experienced in capitalization processes particularly contribute to the building of social resources such as closeness and intimacy.

Emotions displayed by the discloser likely contribute to increased likelihood of that emotion in the responder, and in parallel, emotions displayed by the responder increase the likelihood of that emotion in the discloser. This idea is consistent with previous work showing that interactions partners often mirror each other's emotions (e.g., [Hatfield et al., 1994](#); [Lakin et al., 2003](#)), such that increases in positive emotion by one may increase the likelihood of positive emotion in the other. [Fredrickson and Joiner \(2002\)](#) describe a similar interpersonal process, which they called an "upward spiral" whereby positive emotion increases resources which in turn increase positive emotions. Such mirroring of positive affect provides an ironic twist on the well-known phenomenon of negative affect reciprocity (e.g., [Gottman, 1994](#)). If so, both the discloser and recipient should benefit from responsive interactions following capitalization attempts, which should be reinforcing for relationships and build intimacy. This reasoning has not yet been formally tested, but is consistent with available research.



6. THE NATURE OF BENEFICIAL RESPONSES TO CAPITALIZATION ATTEMPTS

6.1. The heart of perceived responsiveness

Our model proposes that perceived partner responsiveness is at the core of the interpersonal benefits and most of the intrapersonal benefits of capitalization. In the capitalization context, active–constructive responses lead to perceptions of responsiveness; passive or destructive responses do not. Above, we have reviewed how active–constructive responses may convey that the relationship partner understands, supports, and cares for the self. More generally, in other disclosure contexts, what leads to perceived responsiveness? Are there core behavioral elements that foster perceptions of responsiveness across different scenarios? These questions guided research by [Maisel et al. \(2008\)](#).

In their first study, participants read a series of vignettes in which relationship partners disclosed positive or negative events with each other. They then described behaviors that the characters in each vignette could enact to be supportive. From this list of supportive behaviors, two systems were created for coding responsive behavior across different types of interactions (e.g., discussing positive and negative events). One coding guide was specific to rating specific behaviors (a microanalytic manual) and the other coding guide was specific to ratings on a global level (a macroanalytic

manual). Both guides included three categories to be rated: understanding, validation, and caring.

Understanding refers to the ability to gather information and “get the facts right” about partner. Example behaviors from the microanalytic guide were asking questions, summarizing the disclosure. Validation is reinforcement of the discloser’s views of the self. Example behaviors from the microanalytic guide were expressing a knowledge of how the event is important to the discloser and expressing agreement with the discloser’s perspective. Finally, caring involves communicating affection for the discloser. Examples were expressing love and emphasizing joint outcomes.

Both the microanalytic and macroanalytic scales were used to examine the behavior of responders in both a positive event discussion and a negative event discussion. The two guides were useful across both types of disclosure interactions. That is, responders whose behavior was coded as more responsive were rated as being significantly more responsive by the discloser. This work provides evidence that although perceived responsiveness is much in the eye of the beholder, there is also an objective behavioral component to it as well. Moreover, these core elements of responsiveness are the same across situations.

Tanner et al. (2009) used the macroanalytic coding guide to examine responsive behavior in parents, children, and children’s best friends. Each child (age 7–11) attended a laboratory session with their parents. In addition, the child nominated a best friend who also accompanied them to the lab session. The children then did three different and independent capitalization interactions: They shared a recent positive event with mom, they shared a recent positive event with dad, and then their best friend shared a recent positive event with them. The behavior of the listener (mom and dad in the first two interactions, the child in the last interaction) was then coded for responsiveness. Among many interesting results were the findings that both mother’s and father’s responsive behavior predicted the child’s responsiveness to his or her best friend. In turn, the child’s responsiveness toward the best friend was positively related to friendship quality (as assessed by a standard self-report measure of friendship quality). Finally, there were also direct effects from parents’ responsive behavior in the interactions to their children’s friendship quality. In short, the child’s responsive behavior during the best friend’s capitalization attempt was predicted by his or her parents’ responsive behavior to their own capitalization attempts. Moreover, responsive behavior during these parental interactions predicted the quality of the child’s friendship.

6.2. Ambivalence

Although in principle positive events present an opportunity for partners to share in one’s good fortune, in practice their impact may be more ambivalent. Consider, for example, the major job promotion that would require a

partner to be away from home often, or a close friend's admission to a prestigious medical school that denied admission to oneself. Situations of this sort are mixed motive, simultaneously possessing the potential to evoke vicarious joy over a relationship partner's achievement and distress over its personal implications.

At least three such relationship threats are relatively common. First, a partner's accomplishments may engender envy, particularly in self-relevant domains. As Tesser and colleagues have shown (see [Tesser, 1988](#) for a review), a close other's success in a self-relevant domain creates a SEM dilemma, requiring behavioral or psychological adjustment. Second, a partner's good fortune may require geographical relocation or substantial time commitment, or may be emotionally or cognitively demanding, all of which are likely to detract from a partner's physical or psychological availability. Third, a partner's success may threaten stable patterns of interaction, such as when relative status or patterns of dominance are changed. Of course, all of these possibilities are contingent on the existence of an interdependent relationship—perhaps ironically, the same success by a nonpartner would create little such ambivalence.

[Carmichael \(2005\)](#) investigated the effects of ambivalence in capitalization situations by asking participants to respond to one of three conditions: proximity threat (in which the other was admitted to a graduate school more than 1000 miles away), availability threat (in which the other received a prestigious position with a charitable organization that would require substantial increases in time and responsibility), and nonthreatening good news (in which the other received a new car because her parents won the lottery). Each example was attributed to three different partners: a romantic partner, a close friend, or an acquaintance.¹⁰ Participants then described how they would feel and respond in that situation, for each type of partner, using both a list of mood adjectives and a detailed written essay. The mood adjectives were scored for ambivalence using [Priester and Petty's \(1996\)](#) gradual threshold model (GTM), which contrasts dominant and conflicting reactions. Independent coders also rated the written essays for ambivalence, and on the four PRCA response styles.

Both the GTM calculation of ambivalence and the coders more holistic judgments revealed relationship type $\times$ threat condition interactions. As shown in [Fig. 4.10](#), participants displayed a pronounced tendency toward ambivalence with romantic partners in the two threat conditions compared to the no-threat conditions, a somewhat reduced (but still significant) similar tendency with close friends, and no significant tendency with acquaintances. Moreover, independent coding indicated that threat

¹⁰ Acquaintances were not paired with the availability threat, inasmuch as there is no reason to expect an acquaintance to be available to the self.

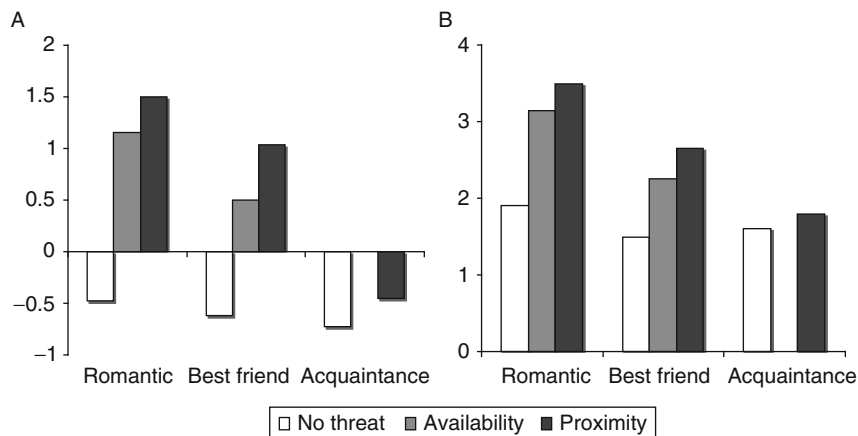


Figure 4.10 Ambivalence as expressed in self-descriptive adjectives (A) and as coded by independent raters from narrative accounts (B; from Carmichael, 2005).

diminished the tendency toward active–constructive responding and increased passive–destructive responding.

In a second study, Carmichael (2005) created videotapes of experienced actors displaying relatively brief (10–15 s) examples of four responses: enthusiastic, ambivalent, disparaging, and ignoring. Each tape included content-free verbalizations (e.g., for enthusiastic, “Wow, that’s sounds like a truly wonderful experience,” and for ambivalent, “Oh, that’s nice, I guess I’m happy for you”) and corresponding nonverbal expressions. Participants first spent a few minutes writing in detail about a personal positive event. They were then shown one of the four tapes and asked to imagine it as the response of a very close friend to whom they had just related the event. As expected, the enthusiastic response produced significant increases in event ratings and positive feelings about the relationship. Ambivalent responses (as well as disparaging and ignoring responses) led to lower ratings of the event and of the relationship.

These findings highlight the recipient’s dilemma in capitalization interactions: Although for the recipient, conversations about a partner’s good news may foster a mixture of positive and negative feelings, displaying that ambivalence can be detrimental.

6.3. Other factors influencing responses to capitalization attempts

Sharing news about personal good fortune is one way that partners may build strength in a relationship. Enthusiastic conversations about good news provide a resource that can help repair damage done by conflict and other

threats to relationship security. Our theoretical model, described earlier, suggests that this occurs because the discloser perceives in the listener's response an appreciation for the event and, when construed more broadly, for the self (Marigold et al., 2007). This logic suggests that any factor impeding the ability to recognize and accept a partner's responsiveness would interfere with this repair-and-rebuild process. Low self-esteem is one such factor. In various studies, Murray, Holmes, and their colleagues have shown that when their feelings of relationship security are threatened, low self-esteem persons tend to deny, dismiss, or fail to recognize their partners' regard for them (see Murray, 2006, 2008 for reviews). Although presumably this tendency serves a self-protective function, it may nevertheless simultaneously contribute to a downward spiral in relationship well-being. High self-esteem persons, in contrast, are more likely to acknowledge their partners' regard, and may even inflate their perceptions of such regard, thereby bolstering feelings of relationship security.

In two studies, Smith and Reis (2009) examined this process directly, asking whether low self-esteem persons tend to overlook or underestimate their partners' responses in capitalization situations. Their first study was run online through the Time-sharing Experiments for the Social Sciences (TESS), an NSF-funded project that conducts online experimental studies with relatively diverse samples. One-hundred seventy two adults ranging from 18 to 88 years of age, all of whom were in committed romantic relationships, were randomly assigned to imagine and then write about one of three priming conditions: a betrayal (their partner running into an ex-romantic partner and neglecting prearranged plans with the participant), a disagreement (vividly arguing about a topic on which they and their partner disagreed), and a neutral event (a mundane, neither positive nor negative, activity in which they were likely to engage during the next few weeks). Afterward, participants described achieving a personal goal that did not directly involve their partner, and answered questions regarding how proud, excited, and happy they would feel about the achievement. They then imagined telling their partner about their accomplishment, indicating on the PRCA scale the anticipated response of their partner.

As hypothesized, there was a significant condition $\times$ self-esteem interaction. In the two threat-priming conditions, self-esteem was positively associated with perceived partner responses: The higher a person's self-esteem, the more actively constructive the perceived response to personal goal achievement. In the neutral condition, self-esteem was unrelated to perceived capitalization responses. Moreover, low self-esteem persons imagined a less constructive response in the disagreement than in the neutral condition. Thus, high self-esteem participants were better able than low self-esteem participants to use perceived responses to capitalization attempts as a means for moving beyond thoughts about a threatening relationship event.

In Smith and Reis's (2009) second study (using data from the 2-week daily diary study described earlier), participants reported on conflict and capitalization experiences with a target person with whom they had a meaningful relationship and with whom they were likely to communicate every day over the 14 days of the study (55% = close friends; 30% = romantic partners; 8% = other; 7% = relationship not identified). Smith and Reis examined the interaction of trait self-esteem (assessed prior to the diary study) and the prior day's conflict on perceived responses to communicating about today's positive events. This interaction was significant (controlling for the positivity of both today's and yesterday's events). On days following no conflict, self-esteem was unrelated to perceived responses to capitalization attempts. On days following conflict, however, low self-esteem persons perceived their partner's response to be more negative, whereas high self-esteem persons perceived their partner's response to be more positive. Thus, conflict appears to undermine low self-esteem persons' ability to capitalize whereas it appears to enhance this ability among high self-esteem persons. Of course, this study does not indicate whether this difference was primarily a matter of motivated perceptual bias or whether self-esteem influenced the nature of capitalization interactions. Prior research on self-esteem and conflict interactions suggests that both processes may be operative (e.g., Murray et al., 2003), but future research is needed to determine whether this conclusion generalizes to capitalization.

6.4. Bidirectionality: Iterative capitalization processes in close relationships

Our model of the capitalization process (shown in Fig. 4.2) depicts an iterative process. By this term, we refer to the repeated and ongoing manner in which the act of conversing with a responsive partner about personal good news fosters perceived capitalization, and in which perceived capitalization in turn influences relationship well-being and the likelihood of such conversations. Although the studies presented in this chapter break down this general model into several constituent processes, in everyday life they are likely to evolve in a continuous, mutually interdependent feedback cycle.

There are several reasons why it is useful to acknowledge the iterative nature of capitalization. First, capitalization is not a random process. People choose what to reveal to whom, and these choices reflect multiple factors, including situationally based goals (Fitzsimons & Bargh, 2003; Miller & Read, 1987), generalized expectations about others' responsiveness (Reis et al., 2004), and relationship-specific expectancies about a particular partner's likely responsiveness (Collins & Read, 1994; Simpson, 2007).

Second, experiences in one capitalization attempt are likely to influence future capitalization attempts. A supportive, encouraging response makes

future openness more likely, whereas a tepid or disparaging response discourages future sharing. We see this part of the process as having both general and relationship-specific components. Experiences in a given relationship may transfer to other relationships under a variety of circumstances (e.g., similarity; Andersen, 2009), especially if repeated across multiple partners. Of course, experiences with a given partner are most likely to influence future behavior with that partner (Berscheid & Reis, 1998).

Finally, the partner's response, which is an important determinant of perceived responsiveness, is influenced by the partner's prior experiences, both with others in general and in a specific relationship with that discloser but with their roles reversed. That is, in an ongoing, mutual relationship, partners typically alternate playing the role of discloser and responder. Partners can be expected to react to the other's accounts of good news in a manner that reflects their experience of the others' response to their own prior accounts of good news. In this way, perceptions may come to influence reality: The perception of a partner's enthusiasm may foster reciprocated enthusiasm, and the perception of disinterest may lead to reciprocated disinterest.



7. SUMMARY AND CONCLUSIONS

Capitalization is a ubiquitous part of daily social life. After all, most human experience takes place in a social context (Reis et al., 2000), and things go right much more often than they go wrong (Gable & Haidt, 2005). The research reviewed in this chapter has consistently shown that people often turn to close others to share their good news. As we have shown, this act of telling others and the response of those others has the potential to multiply the benefits of positive events. These benefits are both personal and relational. The personal outcomes linked to capitalization processes include increased positive emotions, subjective well-being, and self-esteem, and decreased loneliness. Relational outcomes linked to capitalization processes include satisfaction, intimacy, commitment, trust, liking, closeness, and stability. Among the mechanisms involved in capitalization processes that have been identified to this point are increased memory for the event, augmented importance of the event, perceptions that the partner understands, validates, and cares for the self, and a possible upward spiral of positive emotions.

7.1. Directions for future research

Many important questions about capitalization processes remain to be addressed, some of which we outline here. One important question concerns expectations of responsiveness. When a positive event occurs, people

have a choice of whether to disclose that event and, if so, to whom. Presumably, some partners are more likely to respond in an active–constructive manner than others, and certain characteristics of situations may make it more or less difficult for partners to provide an active–constructive response (e.g., [Carmichael, 2005](#); [Tesser, 1988](#)). But from our analyses we know that on average people reap benefits when they make a capitalization attempt, even if the response to that attempt is not taken into account (e.g., [Gable et al., 2004](#), Studies 1 and 4). It seems likely that people choose to share good news with responsive partners and that targets of capitalization on average tend to respond well. A future question therefore is how do people know with whom to capitalize and under which circumstances? Are there individual differences in the skills necessary to disclose or respond effectively? Can one capitalize to too many people or too often? In short, some people may be more efficient in their use of capitalization as an emotion regulation strategy.

Another focus for future research concerns the types of event that create opportunities for capitalization in the first place. The implications of the content and context of positive events on capitalization processes need to be examined. For example, many positive events are goal-relevant. But because not all goals are created equal, not all positive events and the capitalization attempts that follow are likely to affect outcomes in the same way. For example, success on approach-oriented goals (striving for desired, positive outcomes) is likely to lead to feelings of joy and excitement, whereas success on avoidance-oriented goals (striving to avoid undesired, negative outcomes) is likely to lead to feelings of relief and calmness (e.g., [Carver, 1996](#)). Furthermore, intrinsically motivated goals have been shown to be more directly related to well-being than are extrinsically motivated goals ([Ryan et al., 1996](#)). Following this research, we would expect that the well-being effects outlined earlier will accrue more readily with approach-oriented and intrinsically motivated goals than with avoidance-oriented and extrinsic goals.

Another yet-unexplored area for future research concerns the effects of responding to another person's capitalization attempts on the responder. Recent social support research indicates that providing support to close relationship partners during stressful times is associated with a variety of positive outcomes (see [Thoits, 1995](#) for a review), including reduced mortality ([Brown et al., 2009](#)). These findings mesh well with research showing that providing benefits to a relationship partner (e.g., thoughtful gestures, meaningful gifts) has positive implications for the benefit provider, likely involving gratitude and expressed appreciation on the part of the recipient (e.g., [Algoe et al., in press](#)). If so, active–constructive responses should be beneficial for the capitalization provider as well as for the recipient. Furthermore as suggested earlier, successful capitalization may encourage the recipient toward prorelationship behavior, thereby fostering an upward spiral of mutual benefit to both partners.

Attention is also needed for the examination of the motivational underpinnings of capitalization. Situational and person factors both may interfere with people's ability to support their partners' capitalization attempts, or to perceive their partner's active-constructive support when it is offered. Some evidence to this effect is already available, as described above—for example, in how low self-esteem may interfere with the ability to recognize a partner's encouragement (Smith & Reis, 2009) and in the envious feelings that may arise when partners outperform oneself on self-relevant tasks (Tesser et al., 1988). Given the pervasive effects that situational and person factors have on comparable interpersonal processes (e.g., social support, conflict regulation), it seems likely that such research will reveal many important moderators.

Finally, also unexplored to date but potentially fruitful are intervention possibilities. Most couples' interventions focus on problem-alleviation: Identifying dysfunctional patterns of interaction and providing means of rectifying them (Christensen & Walczynski, 1997). Based on recognition that an absence of problems does not necessarily imply the presence of gratification, researchers are now evaluating the impact of interventions focused more on the appetitive than the aversive dimension (e.g., Fincham & Beach, 2009). Capitalization seems a strong candidate for such an intervention, because of its focus on responsive sharing of important self-relevant life events.

7.2. Conclusion

Positive events play an important role in personal and interpersonal well-being. Although making the most of positive events is not traditionally viewed as a form of coping, capitalization research indicates that people do not just take positive events in stride—they “cope” with them. The capitalization process described in this chapter represents one of many possible ways in which people can try to make the most of good fortune when it happens.¹¹ Just as having supportive partners available when things go wrong is beneficial, it is also valuable to have responsive partners when things go right.

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¹¹ Savoring and counting blessings are two other possibilities identified in the literature (Bryant, 1989; Emmons & McCullough, 2003).

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INDIRECT PRIME-TO-BEHAVIOR EFFECTS: THE ROLE OF PERCEPTIONS OF THE SELF, OTHERS, AND SITUATIONS IN CONNECTING PRIMED CONSTRUCTS TO SOCIAL BEHAVIOR

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Contents

1. Direct Accounts of Prime-to-Behavior Effects	261
2. A Self-Perception Account of Prime-to-Behavior Effects	264
2.1. Effect of primes on self-perceptions and behavior	264
2.2. Moderating variables	266
2.3. Summary	281
3. A Person-Perception Account of Prime-to-Behavior Effects	282
3.1. Effect of primes on person perceptions and behavior	283
3.2. Moderating variables	284
3.3. Summary	290
4. A Situation-Perception Account of Prime-to-Behavior Effects	291
4.1. Effect of primes on situational construal and behavior	291
4.2. Moderating variables	292
4.3. Summary	294
5. Moderation of Mechanisms	294
5.1. Self-focus	295
5.2. Other-focus	296
5.3. The role of person and situation-focus	303
5.4. Summary	306
6. The Role of Consciousness	307
7. Conclusion	308
References	309

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Abstract

For more than a decade, researchers have convincingly shown that people's social behavior can be affected by primed constructs without people having any awareness of their influence. Earlier research proposed direct priming accounts for these effects, suggesting that primed constructs exert their effect on behavior in a relatively direct fashion without an intervening role for perceptual processes. In this chapter, we review evidence in favor of an indirect priming account for behavioral priming effects. In these indirect priming effects, a primed construct affects behavior via shifts in perceptions of a perceptual target. We review three types of indirect priming mechanisms: a self-perception, person-perception, and situation-perception mechanism. We also present various moderators that affect the direction and magnitude of each of the indirect priming effects. In addition, we identify factors, related to the attentional focus of the prime recipient, that indicate when each of the different mechanisms operates. Understanding the role of perceptual processes in the prime-to-behavior pathway can unravel more mysteries about the rich and complex nature of social behavior.

Striking research over the last few decades has shown that much human perception and behavior can be affected by environmental stimuli that operate outside of conscious awareness (see Bargh, 1997; Dijksterhuis & Bargh, 2001; Dijksterhuis et al., 2007; Wheeler & Petty, 2001). Environmental stimuli can subtly activate, or prime, accessible constructs in memory, such as traits, stereotypes, goals, representations of significant others, and norms (Bargh & Ferguson, 2000; Dijksterhuis et al., 2007). Once activated, these constructs cause changes in behavior without individuals' intention or awareness. Priming effects have been demonstrated on a wide range of behaviors, such as walking speed (Bargh et al., 1996), academic performance (Dijksterhuis & Van Knippenberg, 1998), helping behavior (Jonas & Sassenberg, 2006; Macrae & Johnston, 1998; Nelson & Norton, 2005), cooperation decisions (Hertel & Fiedler, 1994; Utz, 2004a,b; Utz et al., 2004), memory performance (Dijksterhuis et al., 2000), creativity (Fitzsimons et al., 2008), product choices (Maimaran & Wheeler, 2008; Wheeler & Berger, 2007), speech volume (Aarts & Dijksterhuis, 2003), conformity (Epley & Gilovich, 1999), and voting (Berger et al., 2008).

In all of these effects, primes make mental contents accessible, and these mental contents then direct behavior (Wheeler & DeMarree, 2009). Although studies have uncovered many triggers for automatic behavior processes and a multitude of behavioral outcomes, research has only recently begun to uncover the mechanisms responsible for their operation (Bargh, 2006)—that is, how these accessible mental constructs actually influence behavior. The most common mechanisms proposed for these findings are what we call *direct-activation accounts*. These accounts are proposed to

be direct in that they posit that primed constructs can directly affect behavior without necessitating any intervening perceptual processes. They operate entirely outside of conscious awareness and do not require shifts in the perceptions of any target, either implicit or explicit, to operate.

More recently, a second type of account has gained support. We call this second type of account *indirect*, because it operates indirectly via shifts in perceptions of a perceptual target. In these effects, perceptions of the self (e.g., Wheeler et al., 2005a, 2007), others (e.g., Smeesters et al., 2003, 2009a), or situations (e.g., Kay & Ross, 2003) can shift as a function of primed constructs and determine behavior. Although not identical, these three accounts all share one crucial feature: they all suggest that prime-to-behavior effects do not always operate directly.

In this chapter, we describe these indirect accounts for prime-to-behavior effects, review supportive evidence for each, and indicate their importance for understanding the operation of prime-to-behavior effects. Our focus is on the three most prominent indirect accounts: (a) a self-perception account (i.e., the Active-Self account; Wheeler et al., 2005a, 2007), (b) a person-perception account (Smeesters et al., 2003, 2009a), and (c) a situation-perception account (Kay & Ross, 2003). Before turning to these indirect accounts, however, we first briefly describe two key direct accounts of prime-to-behavior effects.



1. DIRECT ACCOUNTS OF PRIME-TO-BEHAVIOR EFFECTS

The earliest account for prime-to-behavior effects, called the *ideomotor* account or *perception-behavior link* (Carpenter, 1874; Dijksterhuis & Bargh, 2001; James, 1890), suggests that merely thinking about an action is sufficient to create the tendency to engage in that action. Many theorists have argued for a strong, automatic connection between representations used to perceive a certain kind of behavior and those used to behave in that way oneself (see, e.g., Berkowitz, 1984; Lashley, 1951; Prinz, 1987, 1990). In particular, Prinz (1990) has proposed a common coding hypothesis, in which perception and action share the same representational system. The brain regions involved in perceiving someone else's behavior are the same as those used to behave in that same way. Neurophysiological research has shown that mirror neurons in the premotor cortex of nonhuman primates (e.g., the macaque monkey) fire both when they reach for and grasp an object and when they watch an experimenter making the same motions (Gallese et al., 1996; Rizzolatti & Arbib, 1998). Nonconscious mimicry, the tendency to mimic the observed nonverbal behavior of others without

awareness or intention, is the simplest example of the perception–behavior link (Chartrand & Bargh, 1999; Chartrand & van Baaren, 2009).

In mimicry effects, one person directly observes another person's actions, and this observation leads to the tendency to engage in that action oneself. The prime-to-behavior effects that are the focus of this chapter differ in important ways from mimicry. The primes used in the prime-to-behavior literature are typically abstract (e.g., trait-, goal-, or stereotype-related words) and do not involve the direct perception of any person's actions, as is the case in mimicry studies. Additionally, unlike mimicry, in which the measured behavior (i.e., mimicry) occurs simultaneously with the instigating stimulus (i.e., the person's actions being mimicked), prime-to-behavior effects are generally sequential—a prime is first presented, and behavior is measured in a subsequent context. However, the ideomotor account posits that similar processes can lead even these more abstract and temporally dissociated stimuli to automatically instigate behavior. According to this account, priming a social category (e.g., elderly) can activate the associated stereotype, and also associated traits (e.g., the elderly stereotype trait of “slow”). These activated traits can then activate associated behavioral representations (e.g., “walking slowly”), which alter overt behavior (Bargh et al., 1996, Experiment 2). The main prediction of the ideomotor account is that perceptual inputs *directly* translate into behavioral outputs, without any input from other sources (e.g., the situation, others in the environment, the motivational state of the individual) and without any mediating pathway (except for the activation of traits).

Another direct account for behavioral priming is automatic goal activation (Bargh et al., 2001; Custers & Aarts, 2005, 2007; Kruglanski et al., 2002; Moskowitz et al., 2004). Goal-activation accounts also do not require intervening processes such as the perception of relevant targets for behavioral priming effects to occur. Rather, a given prime (e.g., a situational context, a significant other) activates a goal, which then automatically leads to pursuit of that goal (for empirical demonstrations see, among others, Aarts et al., 2004; Chartrand & Bargh, 1996; Chartrand et al., 2007; Fitzsimons & Bargh, 2003; Loersch et al., 2008; Morrison et al., 2007; Shah, 2003). Goal pursuit occurs to the extent that the goal is associated with the prime (for instance, through repeated pairing of the goal with the prime; Aarts & Dijksterhuis, 2000; Bargh & Barndollar, 1996). This activated goal increases the accessibility of behavioral representations that guide overt behavior to facilitate goal pursuit. In one of the first goal priming studies, participants exposed to words related to the construct of achievement (e.g., *achieve*, *succeed*, *win*) performed better on a subsequent word search puzzle than those primed with neutral words, consistent with the idea that they were pursuing an achievement goal (Bargh et al., 2001).

Although this type of effect may appear identical to an ideomotor-based effect, researchers have been able to dissociate the two (for a review,

see Förster et al., 2007). Goal priming causes behavioral changes that display the hallmarks of conscious goal selection: an increase in strength over time, resumption after interruption, and persistence in the face of obstacles (Bargh et al., 2001). Pursuit of goals has also been found to depend on whether positive affect is associated with the goal (Aarts, 2007; Custers & Aarts, 2005). The reward value associated with the goal (i.e., the positive affect that is mentally associated with the goal) provides a subtle signal that one should pursue the goal. Thus, it appears that simply priming individuals with words related to a goal with positive associations can cause them to flexibly alter their behavior so as to maximize the chances of goal satisfaction.

To summarize, according to the two dominant theories of behavioral priming, primes can affect behavior by activating behavioral representations or behavior-relevant goals which then affect behavior directly without necessitating any prime-influenced changes in perceptions of a target. These proposed accounts have had a profound influence on social psychology and have challenged many assumptions regarding how behavior is instigated and sustained. In particular, they have brought to the fore the notion that nonconscious inputs to behavior can operate relatively autonomously and directly.

By contrast, much research in social psychology has been focused on how people's perceptions of themselves, others, and situational norms in the environment can affect their actions, decisions, and attitudes. The accounts we review below link nonconscious effects to these sorts of findings by suggesting that primed constructs can affect behavior not only by directly activating behavioral and motivational representations, but also through their effects on one's self-views, construals of situational norms, and perceptions of others. These indirect, perception-based accounts argue that primed constructs can shape behavior by first altering perceptions of these targets, which then determine which motivational and behavioral representations will be activated and guide behavior. In Section 2, we review three different indirect prime-to-behavior accounts. The first indirect account that we will present proposes that *self-perceptions* play a role in connecting primed constructs to social behavior. Although the formal proposition of this account is relatively young (see the Active-Self Account; DeMarree et al., 2005; Wheeler et al., 2005a, 2007), there is a considerable body of research that supports this account. The two other indirect accounts that we will present, the *person-perception* account (Smeesters et al., 2003, 2009a) and the *situation-perception* account (Kay & Ross, 2003), have received relatively less attention. However, both types of indirect accounts present convincing evidence that the effect of primed constructs on social behavior can operate through the effect that these primes have on perceptions of other individuals or situations.



2. A SELF-PERCEPTION ACCOUNT OF PRIME-TO-BEHAVIOR EFFECTS

One perceptual route for prime-to-behavior effects concerns shifts in perceptions of the self (Wheeler et al., 2005a, 2007). This account, called the Active-Self account, distinguishes between the chronic self-concept and the active self-concept. The chronic self-concept concerns all of the self-concept information that is stored in long-term memory, whereas the active self-concept concerns that self-concept information that is currently accessible and active and used to guide behavior. Although chronic self-perceptions can be relatively stable over time, one's active self-concept can shift substantially from moment to moment and situation to situation (see Wheeler et al., 2007, for a review of how different theories of self-representation account for this simultaneous stability and malleability). In particular, because the self-concept representation is so vast, only a subset of it can be active at any given moment. As a result, the moment-to-moment self-representation that is active (i.e., the active self-concept) can shift rapidly in response to environmental inputs. The active self-concept is an important influence on behavior (see Cross & Markus, 1990; Markus & Wurf, 1987), and the components of the active self-concept that guide behavior include both more explicit, deliberative components and more implicit, automatic components that may not be consciously endorsed (Markus & Kunda, 1986). Hence, both implicit and explicit self-representations are susceptible to situational influence and capable of guiding behavior. If primes are capable of altering the active self-concept, and the self-concept can affect behavior, altered self-perceptions could be one means that primed constructs could affect behavior (Wheeler & Petty, 2001).

2.1. Effect of primes on self-perceptions and behavior

Research has shown that the active self-concept can in fact be affected by primed constructs. Interestingly, these primed constructs can affect the active self-concept both when they are personally relevant and when they are not (e.g., when they refer to an outgroup stereotype), although as we describe below, the extent and direction of influence can depend on factors such as perceived distinctiveness from the primed constructs, the salience of one's identity, and so forth. As some examples of prime-induced shifts in the self-concept, non-African Americans who are primed with the African-American stereotype shift their self-concepts in stereotype-consistent ways, such as feeling closer to African Americans (Wheeler et al., 2008a) and feeling more aggressive, consistent with the African-American stereotype of aggressiveness (DeMarree et al., 2005; Galinsky et al., 2008). Similarly,

both men and women report reduced emotional sensitivity when primed with the male stereotype (Marx & Stapel, 2006), consistent with the stereotype of men as emotionally insensitive. Even nonsocial stimuli can affect self-perceptions. For example, subliminal exposure to the number 7 (vs. 13) can make people feel luckier (DeMarree et al., 2005; Jiang et al., 2009; Morrison et al., 2009b). These effects have been shown on both implicit and explicit measures (e.g., DeMarree et al., 2005; Galinsky et al., 2008; Hansen & Wänke, 2009; Mussweiler et al., 2004; Stapel & Suls, 2004; Wheeler et al., 2008b).

Prime-induced self-concept shifts can mediate prime-to-behavior effects and are not limited to shifts in trait concepts. For example, in one experiment (Hansen & Wänke, 2009), participants were primed with the stereotype of professors or cleaning ladies before completing some trivial pursuit questions. Results indicated that participants primed with the professor stereotype answered more questions correctly. Additionally, the performance differences were mediated by participants' self-efficacy beliefs. Those primed with professors felt more confident in their abilities, and this confidence mediated the performance shifts.

Prime-induced self-concept shifts need not always be assimilative. That is, sometimes primes can lead self-perceptions to shift in a direction opposite to the primed content. For example, exposure to extremely smart exemplars, such as Einstein, can lead one to view oneself as less intelligent (e.g., Dijksterhuis et al., 1998; LeBouef & Estes, 2004). These contrastive shifts in the self-concept permit the Active-Self account to explain findings that are surprising from a direct-activation perspective, such as behavior that is the *opposite* of that implied by the primed construct. According to the Active-Self account, understanding factors that predict the magnitude and direction of self-concept shifts following primed concepts can help predict a prime's effects on behavior, at least insofar as the behavioral shifts follow the self-concept shifts.

As should be clear from the discussion so far, although we describe this mechanism as a self-perception mechanism in this chapter, it should not be confused with self-perception theory (Bem, 1972). Unlike the effects described by self-perception theory, the shifts in self that are the focus of this chapter do not need to be conscious, be actively construed, or be instigated by behavior. Both conscious and nonconscious shifts in the self-concept can follow from primed constructs, and although people may sometimes actively use primed constructs to draw inferences about themselves, self-concept shifts can also occur through passive construct activation (see Wheeler et al., 2007).

As we describe below, although prime-induced self-concept and behavioral shifts can diverge (see Wheeler et al., 2005a), they frequently move in concert with one another. Factors that promote greater assimilation in the self-concept following primes tend to promote greater prime-induced shifts in

behavior. Factors that promote contrastive shifts in the self-concept following primes tend to promote prime-induced contrast in behavior.

2.2. Moderating variables

Many self-related moderators of prime-to-behavior effects have been studied, including those related to distinctiveness from the prime, information processing orientation, and features of the chronic self-concept representation.

2.2.1. Distinctiveness from the prime

A number of features of the prime, the context, and one's general self-construal can affect whether or not a prime is seen as similar to and included in one's self-representation or is seen as a distinct and discrepant stimulus. As such, these features determine whether the primed construct will lead to assimilative or contrastive changes in one's self-perception (and, hence, one's behavior). These features can be both external (e.g., concerning the prime or the context) and internal (e.g., concerning one's level of identification with an ingroup), and both temporary and chronic.

2.2.1.1. Features of the prime: Stereotype versus exemplar One factor that can determine feelings of distinctiveness from the prime concerns the prime itself. Features of a prime such as its concreteness and extremity can determine how it affects perceptions of a perceptual target, such as the self. Several theories describe how primes affect perceptions of targets (e.g., Markman & McMullen, 2003; Mussweiler, 2003; Stapel & Koomen, 2001; see also chapter 6 of this volume). These theories differ in a number of important ways, but they share the feature of predicting that features that make a prime seem distinct from a judged target (e.g., extreme, discrete, and discrepant primes) are more likely to lead to contrast, because these primes are more likely to be used as a comparison standard against which the judged target is seen as dissimilar. Based on this idea, one would expect exemplars, which are more discrete, to be more likely to lead to contrast, but stereotypes, which are more abstract, to be more likely to lead to assimilation. This idea has been empirically supported.

In one set of studies (Dijksterhuis et al., 1998), participants were primed with intelligence via either an exemplar (i.e., Albert Einstein) or a stereotype (i.e., professor) before completing self-concept or behavioral measures. Participants were asked to write about a day in the life of either Albert Einstein or a typical professor. They then completed what was ostensibly an unrelated word task. In the word task, participants indicated as quickly as possible whether each letter string was a word or nonword. This task was designed to assess the accessibility of words related to intelligence. Some of the judged words were intelligence-related words (e.g., smart), some were stupidity-related words (e.g., dumb), and some were neutral words.

Immediately preceding each judged word was a subliminal word related to either the self (e.g., “self”) or not (e.g., “the”). The inclusion of these subliminal words allowed the researchers to parse out general accessibility from self-concept accessibility. Specifically, response latencies to intelligence and stupidity targets that are faster following the self words than the nonself words should indicate the specific accessibility of those constructs within the self-concept (and not more generally). People responded more quickly to intelligence-related words in both the Einstein and professor conditions, regardless of whether they were preceded by a self word or not, suggesting that both primes activated intelligence. However, in the Einstein condition, response latencies to stupidity words were also facilitated, but only when they followed a self word. This indicates that stupidity was activated in the self-concept following the exemplar prime, Einstein, but not following the stereotype prime, professor. This pattern of results is consistent with the idea that participants compared themselves with Einstein and felt unintelligent as a result, at least implicitly.

Parallel effects were observed on behavioral measures. Specifically, in another study, those primed with the stereotype of professors performed better on trivia questions, thereby demonstrating assimilation to the professor stereotype of intelligence. However, those primed with the exemplar of Einstein performed worse on the trivia questions, thereby demonstrating contrast from the intelligent characteristics of the exemplar. Even though both the professor stereotype and Einstein are associated with and activated the trait of intelligence, they had different effects on behavior. This is because they had different effects on the self-concept. Whereas professor stereotypes make people feel more intelligent and lead to more intelligent behavior (e.g., [DeMarree et al., 2005](#); [Dijksterhuis & van Knippenberg, 1998](#); [Galinsky et al., 2008](#)), the exemplar of Einstein made people feel more stupid, and therefore led to less intelligent behavior.

2.2.1.2. Features of the context or the self: Identity distinctiveness

[Section 2.2.1.1](#) illustrates that features of the prime can make the prime seem discrepant and distinct from the self, thereby leading to comparison and contrast in self-perceptions and behavior. Contextual and chronic identity-related features can also make the self seem discrepant from the prime and induce contrast, even from stereotype primes. For example, when the context strongly activates an identity that is incompatible with a primed stereotype, it can lead to contrast. In one study ([Spears et al., 2004](#)), psychology participants completed a questionnaire to heighten the accessibility of their identity as psychology students. They then engaged in a coloring task to provide a baseline estimate of their neatness. Following the coloring task, they unscrambled sentences, ostensibly composed by either psychology or economics students about their daily lives. The sentences contained content to activate the trait of neatness. Last, they

completed the coloring task again. Participants exposed to the neatness sentences from the psychology students (who shared the ingroup identity) colored more neatly (relative to baseline) than did those exposed to the neatness sentences from the economics students (who held an outgroup identity). Hence, the prime had different effects on behavior when it matched or mismatched a highly salient personal identity of the participants.

In that study, there was no nonsalient identity control, and so one must rely on the previous literature showing robust behavioral assimilation to outgroup stereotypes (see [Wheeler & Petty, 2001](#)) as a basis for inferring that a salient outgroup categorization was responsible for the effects. Another study tested this more directly ([Schubert & Häfner, 2003](#)). In that study, participants were told that they had a “ground-based perception” style on the basis of an initial task. They were then exposed to a slide show of either young or elderly people in which each picture was accompanied by statements indicating preferences and actions stereotypical of its relevant stereotype (e.g., “likes to party” for young people and “likes to go for a walk” for elderly people). Additionally, the pictured people either were characterized as having a “figure-based perception” style (i.e., a style that mismatched the participants’ perception style) or were left as uncategorized. Last, participants completed a reaction time task.

Results indicated that participants assimilated to the outgroup stereotype in the uncategorized condition. That is, they were slower on the reaction time task when they had seen elderly people than when they had seen young people, indicating assimilation to the elderly stereotype of slowness. However, when the people were accompanied by the mismatching group labels, contrast resulted—participants were faster in the elderly condition than in the young condition. Hence, these results show that assimilation to stereotypes may be a default response, but when the context makes a difference between the primed stereotype and one’s own identity salient, comparison and contrast can result. A second study conceptually replicated these results and showed that the assimilation and contrast effects on behavior paralleled those on participants’ self-views.

Other studies have shown similar effects by examining participants’ level of closeness to or identification with the primed category as a moderator. As one example ([Ledgerwood & Chaiken, 2007](#), Study 3), participants were subliminally primed with the elderly stereotype (or not) before reporting their agreement with a number of attitude items pretested to be those stereotypic of the elderly. Additionally, in a separate pretest, these participants’ self-reported closeness to the elderly was assessed. Results indicated opposite effects for those who felt close to and distant from the elderly. Among those who felt close to the elderly, the prime led to assimilation—participants reported attitudes more consistent with the elderly stereotype following the elderly prime than following the control prime. This pattern was reversed among those who felt distant from the elderly (cf. [Cesario et al., 2006](#)).

Congruent effects have been observed with participants' level of identification with the ingroup. As one example (Hall & Crisp, 2008), young participants who differed in their level of identification with youthful people were primed with the elderly or young person stereotype by means of a scrambled sentence task. They then completed a lexical decision task and were later asked to recall all of the words that appeared in the task. They were also asked to recall all of the nightclubs in the area. These two recall measures served as the dependent variables. Results indicated that level of ingroup identification had no effect on participants when they were primed with the ingroup (youthful) stereotype. However, it had a significantly negative effect on assimilation to the outgroup (elderly) stereotype. That is, as ingroup identification increased, participants exhibited increasingly *better* recall when primed with the elderly stereotype. Hence, identification with the ingroup of young people increased the likelihood of contrast from the (outgroup) elderly stereotype prime.

Another approach to this same idea has examined how contextual influences on one's self-construal as an independent or interdependent person can influence the operation of prime-to-behavior effects. People can construe themselves in relatively independent ways, viewing themselves as distinct or different from others, or in interdependent ways, viewing themselves as being connected to others (Markus & Kitayama, 1991). Paralleling the research above, contrast effects should be more likely to occur when people are induced to view themselves in independent, rather than interdependent, ways. In one experiment testing this idea (Bry et al., 2008), participants first responded to a biased questionnaire designed to make them view themselves as independent or interdependent. Participants responded to independence (e.g., "I sometimes tend to do my own thing and others do the same") or interdependence (e.g., "To me, sometimes pleasure is spending times with others") questions designed to elicit agreement and therefore activate the desired form of self-construal. Then, they either saw pictures of models designed to activate the blonde stereotype of stupidity, or did not see any pictures. Last, they answered a series of general knowledge questions that varied in difficulty. Results indicated that interdependent participants assimilated to the prime—those primed with the blonde stereotype answered fewer questions correctly than those not so primed. Independent participants, on the other hand, contrasted away from the prime—those primed with the blonde stereotype answered *more* questions correctly than those not so primed. Hence, an activated self-view that emphasizes differences from others leads to contrastive behavior, whereas an activated self-view that emphasizes similarities to others leads to assimilative behavior.

In all of these studies, considering how the primes will affect self-perceptions enhances prediction of the behavioral effects of the prime. In each case, the same primed content (e.g., the concept of intelligence) had different effects on people depending on whether features of the prime,

the context, or their identities made the prime seem distinct and discrepant from themselves. Despite activating the same content, the prime had different implications for the self-concept. In each case, when the self was perceived to be similar to the prime, the prime led to assimilation on behavior, but when the self was perceived to be highly discrepant from the prime, the prime led to contrast on behavior. This body of effects is difficult to predict without suggesting that self-concept shifts played a role in the prime-to-behavior effects.

2.2.2. Processing orientation

A second type of self-related moderator of prime-to-behavior effects concerns the way people process the prime content. In some cases, people process information in ways that promote incorporation of the prime into the self-concept, such as actively relating the prime content to the self or seeking out information about what type of person they are. In other cases, they may not. When one's processing of the prime content increases incorporation of the primed content into the self-concept and use of the self-concept to guide behavior, it should increase priming effects on behavior when they operate by this mechanism. However, some forms of processing, such as actively retrieving one's chronic self-characteristics, could actually inhibit the effect of a prime on behavior, because it increases the likelihood that one's chronic self-characteristics, and not the primed characteristics, would guide behavior. In this section, we review processing variables that deal with these tendencies and describe their influence on prime-to-behavior effects.

2.2.2.1. Perspective taking One information regarding processing orientation that involves seeking overlap between the self and the prime is perspective taking. When one takes the perspective of others, one puts him- or herself "in the other person's shoes" and imagines what it is like to be that person. Naturally, this type of processing facilitates perceiving one to be more similar to the person whose perspective one is taking. In a priming context, therefore, if primes affect behavior by affecting the self-concept, one would expect perspective taking to increase assimilation in prime-to-behavior effects. This prediction has been robustly supported.

In the first demonstration of this effect (Wheeler et al., 2001), White participants were instructed to write about a day in the life of a student named Tyrone Walker or Erik Walker. Because Tyrone is a stereotypically African-American name, writing about Tyrone should activate the African-American stereotype of academic underperformance, whereas writing about Erik should not. Following the priming task, participants completed a series of difficult math questions. Results indicated that those who were assigned to write about Tyrone performed significantly worse on

the math questions than did those who were assigned to write about Erik, indicating assimilation to the stereotype.

However, in the priming essays, not all participants adopted the same perspective. Some participants spontaneously wrote their essays from the first-person perspective (i.e., they wrote their essays from the perspective of Tyrone or Erik), whereas others wrote their essays from the third-person perspective (i.e., they took the perspective of an outside viewer). The math performance decrements observed among those who wrote about Tyrone were due almost entirely to those who wrote their essays from the first-person perspective. Hence, taking the perspective of a stereotype target increases the effect of the stereotype prime on behavior.

These results were conceptually replicated in a study in which male and female participants were assigned to write an essay about a day in the life of a student named Paul (Marx & Stapel, 2006). This priming task was designed to activate the male stereotype, one component of which is low emotional sensitivity. Unlike in the above study, participants were randomly assigned to write their essays from the first-person perspective or the third-person perspective. They then completed a series of tasks designed to assess their level of emotional sensitivity and measures designed to assess their self-perceived stereotypical characteristics. Results revealed interactions between perspective and gender on both self-perceptions and emotional sensitivity performance. Male participants viewed themselves as having low emotional sensitivity and they performed poorly on the emotional sensitivity task regardless of the perspective-taking condition. Female participants, on the other hand, viewed themselves as having lower emotional sensitivity and performed more poorly on the emotional sensitivity test when they took the perspective of Paul in the essay writing task. These findings show that taking the perspective of an outgroup member facilitates a merging of the outgroup stereotype with the self-concept and accordingly leads to more stereotypical behavior.

As a final example of this type of effect (Galinsky et al., 2008, Study 4), participants who differed dispositionally in their tendency for perspective taking were instructed to write about a day in the life of a cheerleader (to activate the stereotypical trait of stupidity). They then rated their liking for the cheerleader, rated their own intelligence, and completed an analytic task adapted from the Law School Admission Test (LSAT). High perspective-taking participants liked the cheerleader more. Additionally, they felt less intelligent, thereby demonstrating greater assimilation of their self-views to the stereotype. Their behavior also assimilated to the stereotype—high perspective-taking participants performed worse on the analytic task. Subsequent mediational analyses showed that liking did not mediate the relation between perspective taking and analytic performance, but self-rated intelligence did. Hence, perspective taking increased the extent to which participants ascribed the stereotypical

characteristics of the prime to themselves, and this assimilation in self-views mediated the effects on performance.

2.2.2.2. Self-monitoring Another processing orientation that can modify prime-to-behavior effects is self-monitoring. Self-monitoring reflects the tendency and ability of individuals to alter their behavior in response to situational demands (Snyder, 1974). High self-monitors are more likely to deliberately modify their behavior to fit in with what they believe to be situationally appropriate, and they accordingly show lower levels of consistency between their internal characteristics (e.g., traits and attitudes) and their behavior than do low self-monitors (e.g., Snyder & Swann, 1978; Snyder & Tanke, 1976). As Graziano and Waschull (1995, p. 238) put it, the prototypical high self-monitor asks, “What does the situation want me to be, and how can I be that person?” Low self-monitors, on the other hand, use their internal characteristics as a guide to behavior and show high levels of consistency between what they believe their internal characteristics to be and their behavior. As Graziano and Waschull (1995, p. 238) put it, the prototypical low self-monitor asks, “Who am I and how can I be me in this situation?”

Interestingly, this desire to understand and be true to the self on the part of low self-monitors can sometimes make their self-views more malleable. For example, when given false information that is supposedly diagnostic of their dispositions, low self-monitors show greater shifts in the self-concept to be consistent with the false information than do high self-monitors (Fiske & von Hentdy, 1992). Similarly, they exhibit greater attitude change in cognitive dissonance studies than do high self-monitors (DeBono & Edmonds, 1989; Snyder & Tanke, 1976). Hence, low self-monitors are not more accurate or more knowledgeable about their self-characteristics. Rather, they try to understand themselves and act consistently with their self-views, and these attempts could ironically make both their self-views and their behavior more susceptible to subtle influences like primes.

This is for two reasons. First, because low self-monitors shift their self-concepts more in response to information they believe to be dispositionally diagnostic, they could exhibit larger effects of primes on the self-concept than would high self-monitors. That is, accessible information that lacks an obvious source (e.g., the trait “intelligent” made accessible from a subtle priming manipulation) can be viewed as being diagnostic with respects to one’s current self-views (e.g., “I feel pretty intelligent!”). If so, the self-concepts of low self-monitors could shift more following primes than should those of high self-monitors. Second, if primed constructs alter behavior by affecting the self-concept, low self-monitors could exhibit greater behavioral shifts because they act more consistently with their (prime-changed) self-concept.

A number of studies are consistent with this analysis. In one study (DeMarree et al., 2005, Study 1), White high and low self-monitors were primed with the African-American stereotype (or not) using the Tyrone Walker versus Erik Walker essay priming task described earlier (see Wheeler et al., 2001). They then completed an implicit measure of felt aggressiveness. Analyses revealed a significant main effect of the prime, such that participants who wrote about Tyrone revealed more felt aggressiveness than those who wrote about Erik. This main effect was qualified by self-monitoring, such that low self-monitors assimilated to the stereotype, but high self-monitors did not. Hence, paralleling previous research with false dispositional feedback, low self-monitors shifted their self-feelings more in response to a potentially diagnostic input about themselves (here, a primed trait). These results were conceptually replicated with subliminal exposure to the number 7 (vs. 13) and an implicit felt luck task (DeMarree et al., 2005, Study 2). Low, but not high, self-monitors felt luckier after subliminal exposure to the number 7.

Do low self-monitors also exhibit larger behavioral effects? The data suggest yes. One experiment (DeMarree et al., 2005, Study 3) built on previous research showing that professor stereotype primes increase the extent of thinking compared to low thought stereotypes, such as the supermodel stereotype. Research in persuasion has consistently shown that high thought people (e.g., people high in the need for cognition; Cacioppo & Petty, 1982) process persuasive messages more carefully as evidenced by their greater sensitivity to the quality of the arguments in the message (Cacioppo et al., 1996). Thoughtful people are much more persuaded by strong and compelling arguments than they are by weak and specious arguments, but less thoughtful people are less likely to distinguish between the two. Because the professor stereotype is associated with high levels of thought, participants who assimilate to the professor stereotype should exhibit larger argument quality effects in persuasion than should those primed with the supermodel stereotype. If low self-monitors are more likely to assimilate to shift their self-views in response to the prime and act on those self-views, they should show this effect more so than high self-monitors. This was observed.

High and low self-monitors were instructed to write an essay about a day in the life of a supermodel or professor before reading an advertisement for a product (i.e., a wristwatch) that contained either strong arguments or weak arguments. An example of a strong argument is, "The Chronotech is water resistant up to 350 feet and is suitable for swimming and diving." An example of a weak argument is, "The Chronotech is water resistant if not submerged and is suitable for wear in all climate conditions." Analyses of participants' subsequent attitudes revealed the predicted pattern. Low self-monitors assimilated to the prime (Fig. 5.1A). That is, they exhibited larger argument quality effects following the professor prime than following

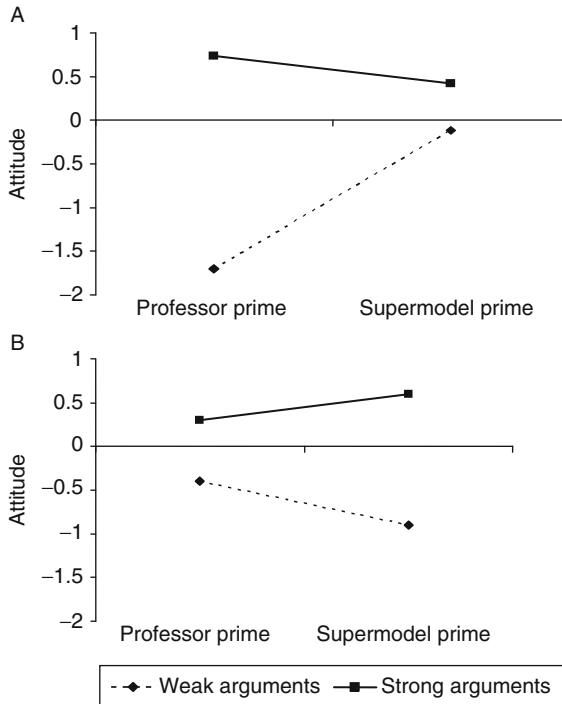


Figure 5.1 Attitudes toward product as a function of argument quality, primes, and low (A) and high (B) self-monitoring (adapted from DeMarree et al., 2005, Study 3).

the supermodel prime, indicating assimilation to the levels of thoughtfulness associated with the stereotypes. High self-monitors were unaffected by the priming manipulation (Fig. 5.1B).

In that study, the thoughtfulness of participants was directly affected by priming them with a high thought or low thought stereotype. Another study (Wheeler et al., 2008b) used a more indirect approach that relies more explicitly on the self-concept. Building on research showing that people process information more when it matches (vs. mismatches) their self-characteristics (Wheeler et al., 2005b), this study primed White participants with the African-American stereotype (or not) before exposing them to a strong or weak advertisement aimed at African Americans or at Whites. If the prime shifts participants' identity to be consistent with the primed stereotype, then White participants primed with the African-American stereotype should process the African-American ad more carefully than the White ad, whereas those not primed with the African-American stereotype should show the opposite pattern. This is what was found, but only among low self-monitors. Low self-monitors exhibited larger argument

quality effects when the prime matched the advertisement target than when it mismatched the advertisement target. High self-monitors did not exhibit any effect of the prime.

These studies show that both the self-perceptions and the behavior of low self-monitors are more affected by subtly primed social constructs than are those of high self-monitors. Because low self-monitors shift their self-perceptions more to assimilate to primed constructs, and because they rely more on these changed self-perceptions as a basis for behavior, they exhibit larger behavioral effects of the prime than do high self-monitors. These studies, again, bring corroborative evidence for the important role of self-perceptions in connecting primed constructs to behavior.

2.2.2.3. *Private self-consciousness* A final processing orientation that can affect prime-to-behavior effects is private self-consciousness. Private self-consciousness is a complex variable that refers to the tendency to direct one's attention inwardly. This inwardly directed attention can have different influences on prime-to-behavior effects. Some research has shown that self-consciousness decreases prime-to-behavior effects. In one experiment (Dijksterhuis & van Knippenberg, 2000), participants were primed with either the stereotype of a professor or the stereotype of a soccer hooligan to activate intelligence or stupidity, respectively. Additionally, these participants were either seated in front of a mirror or not. Mirrors are commonly used as a manipulation to increase private self-consciousness, or self-awareness (Duval & Wicklund, 1972; Mandel & Smeesters, 2008; Wicklund & Duval, 1971). Last, participants answered a series of trivia questions. Participants who were primed with the professor stereotype answered more questions correctly than participants who were primed with the soccer hooligan stereotype, but only when they were *not* seated in front of a mirror. Those seated in front of the mirror exhibited no significant priming effects. The authors argued that the mirror increased the accessibility of participants' personal behavioral cues, thereby overriding the effect of the prime. That is, increased awareness of their actual self-characteristics eliminated the effect of the primed characteristics on behavior.

Other research, however, has suggested that private self-consciousness can increase priming effects. In one illustrative study (Hull et al., 2002), participants high or low in dispositional private self-consciousness were primed with the elderly stereotype (or not) before being surreptitiously timed as they walked a fixed distance. High private self-consciousness participants walked more slowly when primed with the elderly stereotype, consistent with the elderly stereotype of slowness, but low private self-consciousness participants exhibited no effect of the prime. The authors argued that high private self-consciousness increased the prime's effects on behavior because high private self-consciousness individuals are more likely

to encode information as self-relevant, thereby linking the outgroup prime to the self and making it seem applicable to the self.

Hence, these two studies showed opposite patterns of results (private self-consciousness increases vs. decreases prime-to-behavior effects) and used two different accounts to explain them (awareness of chronic behavioral tendencies vs. processing information in self-relevant ways). Although both are consistent with a self-perceptions-based account, they suggest different roles for private self-consciousness in prime-to-behavior effects. To reconcile these conflicting accounts and results in a single study, [Wheeler et al. \(2008b\)](#) simultaneously examined both facets of private self-consciousness. Factor analytic studies on the private self-consciousness scale ([Fenigstein et al., 1975](#)) have revealed that the scale has a two-factor structure ([Anderson et al., 1996](#); [Burnkrant & Page, 1984](#); [Mittal & Balasubramanian, 1987](#); [Piliavin & Charng, 1988](#)). One factor, labeled internal state awareness, refers to one's awareness of one's self-characteristics and other internal states. The other factor, labeled self-reflectiveness, refers to one's tendency to process information in self-relevant ways in order to understand oneself. Consistent with the analysis presented earlier, one would predict that the internal state awareness facet of private self-consciousness should decrease prime-to-behavior effects, but that the self-reflectiveness factor of private self-consciousness should increase prime-to-behavior effects. To test this prediction, the researchers measured participants' internal state awareness, self-reflectiveness, and self-monitoring before subliminally priming them with either rudeness or politeness. After the priming manipulation, participants walked down the hall to a room where the experimenter was talking to a person who was ostensibly her research assistant. The experimenter ignored the participant until the participant interrupted the conversation. The dependent variable was the length of time it took the participant to interrupt.

Results showed that the two facets of self-consciousness, internal state awareness and self-reflectiveness, had opposing effects. Specifically, participants primed with rudeness (vs. politeness) interrupted the experimenter more quickly, but only when they were low in internal state awareness. The pattern for self-reflectiveness was the opposite. That is, participants high, but not low, in self-reflectiveness assimilated to the prime. In addition to the two interactions just described, there was a third interaction between self-monitoring and the prime. Conceptually replicating the research described in the prior section, low self-monitors interrupted more quickly when primed with rudeness than when primed with politeness. High self-monitors were unaffected by the prime. This experiment suggests that all three variables—internal state awareness, self-reflectiveness, and self-monitoring—can have different and independent influences on prime-to-behavior effects.

Across all of these experiments, it is clear that the self-focused attention that accompanies private self-consciousness can affect prime-to-behavior

effects in different ways. To the extent that this self-focused attention increases one's awareness of one's chronic internal states, it can decrease prime-to-behavior effects, because one relies on one's chronic self-characteristics, rather than the prime, to guide behavior. However, to the extent that self-focused attention increases self-reflective processing, it can increase prime-to-behavior effects, because one processes the primed content in self-relevant ways, which facilitates self and behavioral change.

2.2.3. Features of the chronic self-concept

A third type of self-related moderator of prime-to-behavior effects concerns features of the self-concept itself. If prime-to-behavior effects operate by affecting the self-concept, then those who have more malleable self-concepts should exhibit larger prime-to-behavior effects than those who have less malleable self-concepts. In studying features of the self-concept that render it more resistant to external influences, researchers have discovered parallels between characteristics of resistant attitudes and those of resistant self-concept representations (DeMarree et al., 2007a,b). Below, we describe these types of variables that, when applied to the self-concept, predict the magnitude of prime-to-behavior effects.

2.2.3.1. Accessibility Accessibility refers to the activation potential of a mental construct (Higgins, 1996). Like accessible attitudes, accessible chronic self-concept representations have been shown to be both (1) more resistant to influence and (2) more influential in guiding behavior (see DeMarree et al., 2007a). To the extent that the same outcomes are observable in a priming context, one would expect that those with more accessible self-concept representations should (1) be more likely to act consistently with their chronic self-characteristics and (2) be less likely to be influenced by primed constructs. Research supports these predictions.

One experiment (Smeesters et al., 2009b, Study 1), examined whether the accessibility of different chronic behavioral tendencies would affect the likelihood that these chronic tendencies, and not primed constructs, would guide behavior. They measured the accessibility of people's value orientations using the Ring Measure of Social Values (Liebrand, 1984). In this task, participants make a series of allocations between themselves and others. In these allocations, people can make decisions that primarily favor themselves, either absolutely or relatively (reflecting a prosself orientation), or decisions that maximize joint outcomes and equality (reflecting a prosocial orientation). People differ not only in the decisions that they make, but also in the consistency with which they make prosself or prosocial choices. Those who make more consistent choices exhibit greater self-concept strength, presumably reflective of greater accessibility of that particular component of the self-concept.

After completing the Ring Measure of Social Values, participants completed a series of filler tasks. They were then subliminally primed with religion-related, business-related, or neutral concepts before playing a dictator game. In the dictator game, the participants were given eight chips, each with a value of BEF 5 (i.e., Belgian Francs was the currency in Belgium before the Euro was introduced) and told to make an allocation to the other that could range from nothing to BEF 40. This allocation was the dependent measure. Results revealed interactive effects between the prime, participants' social value orientation, and the consistency of their social value orientation. Consistent prosself and prosocial individuals (i.e., those who had accessible prosself or prosocial self-concepts) acted consistently with their dominant social value orientation—prosself participants kept more of the allocation for themselves than did prosocial participants. They were not affected by the prime. Inconsistent prosself and prosocial individuals (i.e., those who had less accessible prosself or prosocial self-concepts) did not act in line with their social value orientation. Rather, they acted consistently with the primed constructs—those primed with religion-related concepts allocated more to the other than those primed with neutral concepts, and those primed with business-related concepts allocated less. Hence, those who had highly accessible self-representations acted in line with those self-representations and not with the primed concepts. Those who had less accessible self-representations did not act in line with those self-representations, but rather with the primed concepts.

In a follow-up experiment (Smeesters et al., 2009b, Study 2), accessibility of the self-concept was manipulated rather than measured. This study was conducted only among individuals with an inconsistent social value orientation. Participants first completed the Ring Measure of Social Values. They then completed a phony translation task, actually a self-activation manipulation, in which they guessed the translation of various Cyrillic Russian words. In the self-activation condition, the words they could choose from to translate the Russian words were self-related (e.g., I). In the no self-activation condition, the words instead referred to places (e.g., city). Previous research has shown that exposure to self-relevant pronouns increases self-activation (Hamilton & Shuminsky, 1990). Following the translation task, they were primed with religion-related, business-related, or neutral constructs and played a dictator game, as in the prior experiment. Paralleling the previous study, the primes affected those participants in the no self-activation condition, but not those in the self-activation condition. Specifically, when participants with an inconsistent social value orientation completed the translation task with the nonself-related (i.e., location-related) words, the primes had a significant effect—religion-related primes led to larger allocations to the other person than did neutral primes, and business-related primes led to smaller allocations. However, when these participants completed a translation task with self-related words,

thereby making their self-concepts accessible, the primes had no effect. Hence, increasing the accessibility of chronic self-representations increased the likelihood that chronic self-representations, and not the primed constructs, would guide behavior.

2.2.3.2. Self-concept consistency Another feature of the self-concept that can affect prime-to-behavior effects is self-concept consistency. Some people have considerable consistency in their self-views, whereas others do not. These latter people may simultaneously endorse conflicting traits as being self-descriptive, or they may have desired self-characteristics that differ quite dramatically from their actual self-characteristics. Both of these forms of self-concept inconsistency can increase the magnitude of prime-to-behavior effects.

The first form of self-concept consistency concerns consistency in the traits that one endorses as being self-descriptive. This form of self-concept (in)consistency has been called self-concept ambivalence and has its roots in the attitudes literature. In the attitudes literature, ambivalence refers to holding inconsistent evaluations about the same target (Kaplan, 1972; Thompson et al., 1995). For example, someone who is ambivalent about fuel-efficient cars would simultaneously hold both positive (e.g., “fuel-efficient cars are good because they are better for the environment”) and negative (e.g., “fuel-efficient cars are bad because they do not have the same power that less efficient cars have”) evaluations toward such cars. This evaluative inconsistency renders the attitude more susceptible to change and less predictive of behavior (e.g., Armitage & Conner, 2000).

Recent research on self-concept consistency has extended this notion of ambivalence to nonevaluative self-related constructs. That is, in addition to having inconsistency in one's evaluations of a given attitude object, one might also have inconsistency regarding one's self-perceptions. For example, a person may simultaneously endorse that he is both lazy and industrious. A different person may not hold such inconsistency. Who should be more susceptible to priming effects? One might expect that, paralleling findings with attitudinal ambivalence, the person who had inconsistent self-concept representations should be more likely to exhibit self-concept change and therefore prime-to-behavior effects.

This is what has been found. In one experiment (DeMarree et al., 2009), White participants were primed with the African-American stereotype (or not) before completing a measure to assess the extent to which they held stereotypical attitudes. These attitude items were pretested to be those that the participant population believed that the typical African Americans would endorse (e.g., “Policies aimed to reduce racial inequalities, such as affirmative action, are important to our society”). Previous research has shown that people who are primed with stereotypes (e.g., the elderly stereotype) subsequently report more stereotypical attitudes (e.g., conservative attitudes;

Kawakami et al., 2003). Following several filler tasks designed to eliminate any residual effects of the prime, participants completed the measure of self-concept ambivalence. Specifically, they indicated the extent to which they held different traits that were consistent and inconsistent with the African-American stereotype. Measurement of these traits paralleled that used to measure ambivalence in attitudes. The wording was as follows: Considering only the LAZY (INDUSTRIOUS) features of yourself and ignoring the industrious (lazy) ones, how lazy (industrious) would you say you are? Participants completed these items for three stereotypic trait dimensions: lazy/industrious, athletic/unathletic, and aggressive/peaceful. People who endorse both a stereotypic trait and its opposite have high levels of self-concept ambivalence.

Analyses revealed the predicted prime $\times$ self-concept ambivalence interaction. The African-American stereotype prime increased endorsement of the stereotypical African-American attitude items, but only among those who had high levels of ambivalence along the stereotypic traits. That is, those who had conflicting self-representations along the stereotypic dimensions were most affected by the prime. Those low in ambivalence, who had consistency along those traits, were unaffected by the prime.

Another form of self-concept consistency concerns the relation between the traits that one currently has and the traits that one desires to have. Discrepancies between one's actual and desired self-representations have been extensively studied (Higgins, 1987; Markus & Nurius, 1986). For any given dimension, some people will have rather large discrepancies between their actual and desired self-characteristics, whereas others will have no discrepancies whatsoever. Paralleling the research on self-concept ambivalence discussed earlier, one might expect that those who have large inconsistencies between their actual and desired self-characteristics (i.e., those who desire characteristics other than those that they currently have) would exhibit the largest prime-to-behavior effects. This is in fact what has been found (Morrison et al., 2009a).

In a procedure similar to the study described earlier, participants first completed a measure to assess the extent to which traits stereotypical of the elderly (i.e., traditional, stubborn, and forgetful) described both the way they currently were and the way they desired to be. The absolute difference between participants' actual and desired standing on the traits served as the measure of discrepancy. Following several filler tasks, participants were then primed with the elderly stereotype (or not) by writing about a day in the life of either an elderly or young person. Last, they rated their agreement with a series of attitude items pretested to be those that the stereotypical elderly person would agree with (e.g., "There is too much violence in the media."). Analyses revealed a prime $\times$ discrepancy interaction. Those who had large discrepancies between their actual and desired self-characteristics regarding elderly traits were affected by the prime—those primed with the

elderly stereotype reported more stereotypical attitudes than those not so primed. Those who had small discrepancies between their actual and desired self-characteristics regarding elderly traits were unaffected.

2.3. Summary

As this section on self-perceptions indicates, a great deal of evidence supports the idea that primes can affect behavior indirectly via their effects on the self-concept (see also [Wheeler et al., 2005a, 2007](#)). Features that render the self-concept more susceptible to change increase prime-to-behavior effects. Features that make the self-concept seem distinct, different from, or discrepant from primed constructs tend to lead to contrast in behavior. These effects are generally not compatible with the direct accounts for prime-to-behavior effects, but point to the critical role that the self-concept plays in channeling construct accessibility into behavior.

As alluded to earlier, research is supportive of the notion that prime-induced behavioral changes often shift in concert with self-concept changes, but this is not always the case. When people experience undesired self-concept shifts, they may attempt to restore a desired self-view (see also [Wheeler & DeMarree, 2009](#)). For example, in one study ([Zhong & Liljenquist, 2006](#)), participants were instructed to copy a story about either an ethical or unethical deed before rating the desirability of various products. Participants who wrote about unethical deeds found cleaning products to be more desirable. The authors argued that this occurred because of the link between morality and cleanliness. Participants who wrote about unethical deeds presumably implicitly believed that they could metaphorically “wash away their sins.” A follow-up study using a similar manipulation found that those primed with immorality were more likely to select cleaning products (i.e., an antiseptic wipe) versus other products (a pencil) as a reward for participating in the study. A conceptually parallel set of studies ([Sachdeva et al., 2009](#)) showed that feeling positively can license one to act immorally. In one study, participants wrote a self-relevant story containing either positive or negative words. Those who wrote about positive words subsequently donated less to a charitable cause. Additional studies verified that the effects were due to self-concept shifts. In both of these papers, the primes induced self-concept changes in one direction, but behavior shifted in the opposite direction. Hence, although people frequently act consistently with the active self-concept, they may deviate from those self-views when they feel licensed to do so or when they attempt to repair undesired self-views (see also [Gao et al., 2009](#)).

All of the studies in this section support the proposition that primes can modify behavior by virtue of their effects on the active self-concept. However, primes can also affect perceptions of other targets. In [Section 3](#), we turn to a second indirect mechanism for prime-to-behavior effects: person perceptions.



3. A PERSON-PERCEPTION ACCOUNT OF PRIME-TO-BEHAVIOR EFFECTS

Much prime-to-behavior research has been conducted under relatively nonsocial conditions, which allow for little interaction with others. Many experiments occur entirely within the confines of an isolated cubicle and measure mostly nonsocial-dependent variables, such as cognitive performance. However, many real-world behaviors take place in interpersonal settings, ranging from situations in which others are merely present in the environment (but with whom one does not interact) to situations in which one actively interacts with others who influence one's outcomes (Latané, 1981; Rusbult & Van Lange, 2003). In many of these situations, other people can exert an influence on our thoughts and behaviors. For example, we watch others' behaviors to learn how to behave in novel situations. We also focus on others to learn more about ourselves, for self-evaluative reasons, which can also affect our behavior (Dryer & Horowitz, 1997; Stapel & Van der Zee, 2006). In many other situations, such as social dilemmas, negotiations, or romantic relationships, we are interdependent with others, as our outcomes do not only depend on our own decisions, but also depend on the decisions of others (Holmes, 2002; Kelley et al., 2003).

In these types of situations, one's actions can depend on one's perceptions of others. Many studies in the social dilemma literature demonstrate that individuals tend to focus on their interaction partner in order to understand them and form expectations about their future behavior. The expectations formed of the other serve as an important input into their subsequent actions (De Bruin & Van Lange, 1999a,b; Kelley & Thibaut, 1978; Kuhlman & Wimberley, 1976; McClintock et al., 1984; Van Lange, 1999; Van Lange & Kuhlman, 1994; Van Lange & Liebrand, 1989, 1991a,b). For example, in social dilemmas, participants who think that their partner dislikes them (Jones & Panitch, 1971) or who believe that their partner is a hostile (Snyder & Swann, 1978) or competitive person (Kelley & Stahelski, 1970) behave more competitively toward them than those who do not hold these beliefs. The effects of perceptions of others on social interactions are not always confined to game situations. Word et al. (1974), for example, showed that black "job applicants" receive shorter interview times, greater physical distancing, and higher rates of speech errors from white interviewers than do white applicants. Hence, whether perceptions are created in the lab by an experimenter or held by the participant prior to entering the situation, they profoundly influence the social interaction.

For person perceptions to affect the operation of prime-to-behavior effects, primed constructs must first influence perceptions of others. Such an effect—that is, of construct accessibility on social perception—has been

demonstrated abundantly (for review, see [Higgins, 1996](#); [Stapel, 2007](#)). In the first demonstration of such an effect ([Higgins et al., 1977](#)), participants were primed with either the positive or the negative version of traits that could both be used to describe the same type of behavior (e.g., adventurous vs. reckless, independent vs. aloof). These primes led to an assimilation effect on perceptions of an ambiguously described person. When at least two alternative constructs are equally applicable to describing a person, the most accessible construct tends to be the one that is applied. Hence, participants in this study who were primed with the positive set of traits formed more positive impressions of the target, whereas those primed with negative traits formed more negative impressions.

In a similar experiment, [Srull and Wyer \(1979\)](#) primed their participants with the concepts of “hostility” or “kindness.” After this task, participants read a vague description of a person named Donald and reported their impressions. Results showed assimilation to the primed concepts: Donald was rated as more hostile following the priming of the trait concept hostility and more kind following the priming of the trait concept kindness (see also [Srull & Wyer, 1980](#)). Thus, as noted earlier, trait primes lead to assimilation because they work as interpretation frames, causing perceptual input to be interpreted in line with this trait construct (for similar effects, see [Bargh & Pietromonaco, 1982](#); [Higgins, 1996](#); [Lerouge & Smeesters, 2008](#); [Mussweiler & Damisch, 2008](#); [Schwarz & Bless, 1992](#); [Stapel et al., 1996, 1997](#)). Similar effects have also been obtained in the case of primed stereotypes ([Blair & Banaji, 1996](#); [Devine, 1989](#)).

Hence, it is well established that primes can affect perceptions of others. Can these prime-influenced perceptions then affect behavior? This has been the matter of some debate. Some scholars have argued for the existence of person-perception-based prime-to-behavior effects (e.g., [Herr, 1986](#); [Neuberg, 1988](#)) and others have argued against them ([Bargh et al., 1996](#); [Carver et al., 1983](#); [Dijksterhuis & Bargh, 2001](#)). However, recent research clearly establishes that prime-to-behavior effects can be mediated by perceptions of interaction with others ([Smeesters et al., 2009a](#)). We now turn to the evidence in favor of a person-perception-based mechanism for prime-to-behavior effects.

3.1. Effect of primes on person perceptions and behavior

In one of the first papers that examined the influence of primes on both perceptions and behavior ([Carver et al., 1983](#)), participants viewed a model who displayed either aggressive or neutral behavior. They then read about an ambiguously hostile person and were asked to form an impression of him. Participants exposed to the aggressive model subsequently perceived the ambiguously hostile person to be more hostile than did those exposed to the neutral model. In a second experiment, the experimenters primed the

concept of hostility among half of their participants by incidentally exposing them to words related to this concept. The remaining half of the participants was not primed with hostility. Subsequently, participants played the role of a teacher in a learning task based on the classic experiment of [Milgram \(1963\)](#). In the learning task, participants had to administer electrical shocks to a second participant (actually a confederate) whenever this second participant gave an incorrect answer to a question. The participants were free to choose the intensity of the shocks. The results showed that participants primed with hostility delivered more intense shocks than did control participants. In other words, priming hostility indeed led to more hostile behavior.

Because perceptions and behaviors were measured in separate studies, it is unclear whether perceptions played a role in the prime-to-behavior effects in Carver et al.'s second study. Hostility primes could have operated via a relatively direct route (e.g., by directly activating hostility-related behavioral representations), or the primes may have led participants to perceive the other as more hostile and to administer greater shocks as a result. [Carver et al. \(1983\)](#) concluded that the perceptual and behavioral effects of priming operated independently, stating, "...our prediction is not based upon the assumption that priming the conceptual schema of aggression will cause subjects to see the other person in the interaction as aggressive. Rather, we assume that the prime will tend to activate the behavioral quality (as well as the perceptual quality) for potential use, and that once activated, it will tend to find expression." (p. 412).

Others would later disagree with this idea and instead argue that person perceptions can indeed be influenced by primes and affect subsequent behavior. In one study, participants were primed with the concept of loyalty or equality in the context of a resource allocation task ([Hertel & Kerr, 2001](#)). In the resource allocation task, participants could make allocations to either ingroup or outgroup members. The results showed that participants primed with loyalty showed greater ingroup favoritism (as measured by the difference in allocations to the ingroup vs. outgroup member) than participants primed with equality. Further results showed that participants expected more cooperation from their ingroup members in the loyalty priming condition compared to the equality priming condition. Hence, this paper showed that primes can affect both person perceptions and behavior within the same experiment and that person perceptions and behaviors can both be similarly affected by a prime. The research reviewed in [Section 3.2](#) goes farther by testing moderation variables that are not as easy to reconcile with a direct-activation account.

3.2. Moderating variables

We discuss three moderating variables that render person-perception processes more likely to determine prime-to-behavior effects. These are prime extremity, opportunity for reciprocation, and dispositional competitiveness.

3.2.1. Prime extremity

A first moderating variable is prime extremity. A direct account would presumably argue that more extreme primes should lead to more extreme behavior. However, as reviewed earlier, indirect perception-based accounts would not make the same prediction, because extreme primes can be seen as more discrepant from perception targets and lead to contrast in perceptions. When behavior is congruent with these perceptions, extreme primes can lead to behavioral contrast.

In one study that showed this type of effect ([Herr, 1986](#)), participants were primed with exemplars that varied in their level and extremity of hostility. The four priming conditions included extremely nonhostile (e.g., Peter Pan, Santa Claus), moderately nonhostile (e.g., Robin Hood, Henry Kissinger), moderately hostile (e.g., Alice Cooper, Joe Frazier), or extremely hostile (e.g., Adolf Hitler, Charles Manson) exemplars. Participants then read a description of an ambiguous person they would play a prisoner's dilemma game with (which was patterned after the Donald description of [Srull & Wyer, 1979](#)), and rated this person's hostility, friendliness, kindness, and competitiveness. Last, they decided how much to allocate to the person in the prisoner's dilemma game.

From a direct-activation perspective, one might expect the hostility of the primes to exert a linear effect such that as the primes increased in hostility, so too would the competitiveness of participants' behavior. From a person-perception perspective, one would expect that the extreme and moderate primes would exert different effects. The extreme targets should be viewed as both concrete and highly discrepant from the judgment target (here, the other person playing the prisoner's dilemma game) and therefore lead to contrast in person perceptions (see also [Biernat et al., 1991](#); [Herr et al., 1983](#); [Manis et al., 1988](#)). If people behaved congruently with those perceptions, it would lead to different effects for the moderate and extreme primes.

The results revealed assimilation effects in both perception and behavior in the moderately hostile and moderately nonhostile exemplar conditions. Participants primed with moderately hostile exemplars (1) rated the other as more hostile, less friendly, less kind, and more competitive and (2) allocated less to the other compared to those primed with moderately nonhostile exemplars. When participants were primed with either extremely hostile exemplars or extremely nonhostile exemplars, a contrast effect in perception and behavior occurred. Participants primed with extremely hostile exemplars (1) rated the other as less hostile, friendlier, kinder, and less competitive and (2) allocated more to the other compared to those primed with extremely nonhostile exemplars. These results are in line with a person-perception account for behavioral priming effects: participants likely based their level of competitiveness on the perceived hostility of the interaction partner.

3.2.2. Opportunity for reciprocation

Instead of manipulating aspects of the prime, other research has manipulated features of the behavioral context to test the person-perception account. Perceptions of others might be likely to affect one's behavior when the other person has some influence over one's outcomes. When one's outcomes are dependent on another person, it is important to understand what the person is like so that one can act so as to best maximize one's outcomes. Based upon this idea, Hertel et al. (2002) primed their participants with either cooperative ingroup norms (by emphasizing to participants that it is important that everyone is well off) or competitive ingroup norms (by emphasizing to participants that it is important to be better off than others), and examined the effect of these primes on allocations to an ingroup member in a choice task. The results demonstrated that competitive ingroup primes led to smaller allocations to the other than did cooperative ingroup primes, but only when the ingroup member also could allocate outcomes to the participant (mutual allocation task). The primed norms did not have an effect on allocation behavior when the ingroup member could not affect the outcomes of the participants (unilateral allocation task). That the primes affected behavior in the mutual allocation task, but not in the unilateral task is consistent with a person-perception-mediated account. Specifically, in the mutual allocation condition the competitive primes could have created competitive perceptions of the ingroup partner leading participants to expect lower allocations from him. Driven by these expectations, participants primed with competitive constructs should have allocated less to the other. Because there was no opportunity for reciprocation in the unilateral task, perceptions of the other were less relevant, and therefore no priming effect was observed.

3.2.3. Dispositional competitiveness

Other research has focused on how primed constructs interact with the dispositional characteristics of the actor to determine social behavior. One of the first studies that examined prime $\times$ disposition interactions was conducted by Neuberg (1988). He examined the effect of primed competition (or neutral primes) on allocations made in a multitrial prisoner's dilemma game. Participants' decision (to defect or cooperate) on the first trial of the game was used as an indication of their competitive or cooperative predisposition. The results showed that competition primes led to more competitive behavior compared to neutral primes over the various trials of the prisoner's dilemma game, but only among participants with a competitive predisposition (and not among those with a cooperative predisposition). Although he did not measure perceptions of the other in the prisoner's dilemma, he argued that his results are in line with a person-perception explanation, suggesting that the competitive primes might have caused

participants to interpret the behavior of others as more competitive than did the control primes. This might have led participants with a competitive predisposition to behave consistently competitive over the various trials of the game. However, participants with a cooperative predisposition might adopt more cooperative choices when acting with a competitively perceived other as a strategy to change the opponent's behavior over the various trials from competitive into cooperative. Neuberg (1988) phrased it as following, "In the case of the prisoner's dilemma game, the generally appropriate response, if one is basically competitive, to perceiving a partner as being competitive might be to behave competitively oneself, and, if one is basically cooperative, to cooperate in order to change the other's behavior. The data are consistent with such a mechanism." (pp. 225–226).

The aforementioned research either speculated about effects on perceptions or showed that both perceptions and behavior shift as a function of primed constructs, without actually demonstrating a relation between perceptions and behaviors. A set of more compelling evidence was provided by Smeesters et al. (2003), who demonstrated this relation. They primed participants with morality versus might concepts in the context of a one-trial social dilemma game, which leads to less strategic behavior compared to a multitrial game (as in Neuberg, 1988). They also measured individual differences in cooperative versus competitive behavior in social dilemmas. More specifically, they measured participants' social value orientation and the dispositional strength of the orientation. As described earlier, social value orientation is a relatively stable preference for specific patterns of outcomes for oneself and others (McClintock, 1972; Messick & McClintock, 1968). Participants were categorized as high- or low-consistency prosocials (who tend to enact behaviors that maximize joint outcomes along with equality) or proselfs (who tend to enact behaviors that either maximize their own outcomes or maximize the relative advantage over other's outcomes). Thus, their research entailed an environmental manipulation (priming of the constructs morality vs. might) and two individual difference variables (social value orientation and consistency of social value orientation).

Before running their experiments, Smeesters et al. (2003) relied on direct priming accounts to make predictions. They hypothesized that primes would primarily regulate the allocation behavior of low-consistent prosocials and proselfs (because their self-concept is very malleable; Hertel & Fiedler, 1998). They further expected that the allocation behavior of high-consistent prosocials and proselfs would mainly be determined by their chronic self-concept and less so by the primed constructs. However, the results were *not* entirely in line with expectations. For low-consistency prosocials and proselfs, their behavior was indeed consistent with the primes: morality primes led to more cooperation than did might primes.

However, high-consistent individuals were also affected by the primed constructs.¹ More specifically, high-consistency prosocials' allocation behavior assimilated to the primed constructs (i.e., more cooperation following morality primes compared to might primes). High-consistency prosocials, on the other hand, assimilated only in the case of might primes but contrasted away in case of morality primes (compared to a neutral priming condition).

Smeesters et al. (2003) switched from a direct-activation account to a person-perception account to explain their obtained, and nonpredicted, results. It was unlikely that a direct priming account could explain why high-consistent prosocials played very competitively after priming with morality trait primes. They hypothesized that beliefs about the interaction partner's cooperation might have played a central role in connecting the morality and might primes with participant's cooperative behavior. When in a social dilemma (which is an interdependent situation), individuals might engage in a spontaneous expectation formation process. Previous social dilemma research demonstrated that expectations of a partner's cooperation serve as an important ingredient in an individual's economic decisions (Kelley & Stahelski, 1970; Van Lange & Kuhlman, 1994). Earlier research also indicated that the way expectations serve as an ingredient for behaving in social dilemmas depends on one's social value orientation. Prosocials follow a "behavioral assimilation" principle (Kelley & Stahelski, 1970). These individuals desire reciprocity: they act cooperatively as long as they expect the other to cooperate but act selfishly if they expect the other to be a noncooperative individual. Prosocials are less guided by considerations of reciprocity and instead tend to exploit the cooperative behavior of interdependent others.

Smeesters et al. (2003) tested these new predictions in several studies, in the context of 2-person and 10-person social dilemma games, using supra-liminal and subliminal primes. Participants were again primed with morality versus might primes, and the impact of these primes was examined not only on cooperation behavior, but also on the expected cooperation from the interaction with other. The results confirmed that the primes had an effect on

¹ The findings of Smeesters et al. (2003) showed that primed constructs affect the cooperation behavior of individuals with a high-consistent social value orientation in the context of a social dilemma game, whereas this was not the case in the context of a dictator game (Smeesters et al., 2009b). The reason for this apparent contradiction lies in the different dynamics in a social dilemma (an interdependent situation) versus dictator game (an independent situation). In social dilemmas, individuals' outcomes depend on others' decisions and it is thus important to anticipate the reactions from these others. Individuals, therefore, pay a lot of attention to the interaction with other when they find themselves in interdependence situations. Primed constructs directly shape perceptions in these situations, and individuals modulate their behavior in accordance with the biased perceptions. The way this occurs depends on the participants' particular social value orientation. As a result, the behavior of individuals with a high-consistent social value orientation behavior shifts as a function of the primed constructs. In situations of independence, individuals do not tend to focus heavily on the other, as he/she does not have any decision power. Individuals' behavior in these situations seems to be directly under the influence of accessible self-concept context, which is either chronically accessible self-concept content or primed self-concept content. Smeesters et al. (2008b) directly manipulated the level of interdependence in one study and confirmed that the behavior of high-consistent social value orientation only varied as a function of primed constructs in a situation of interdependence but not in a situation of independence.

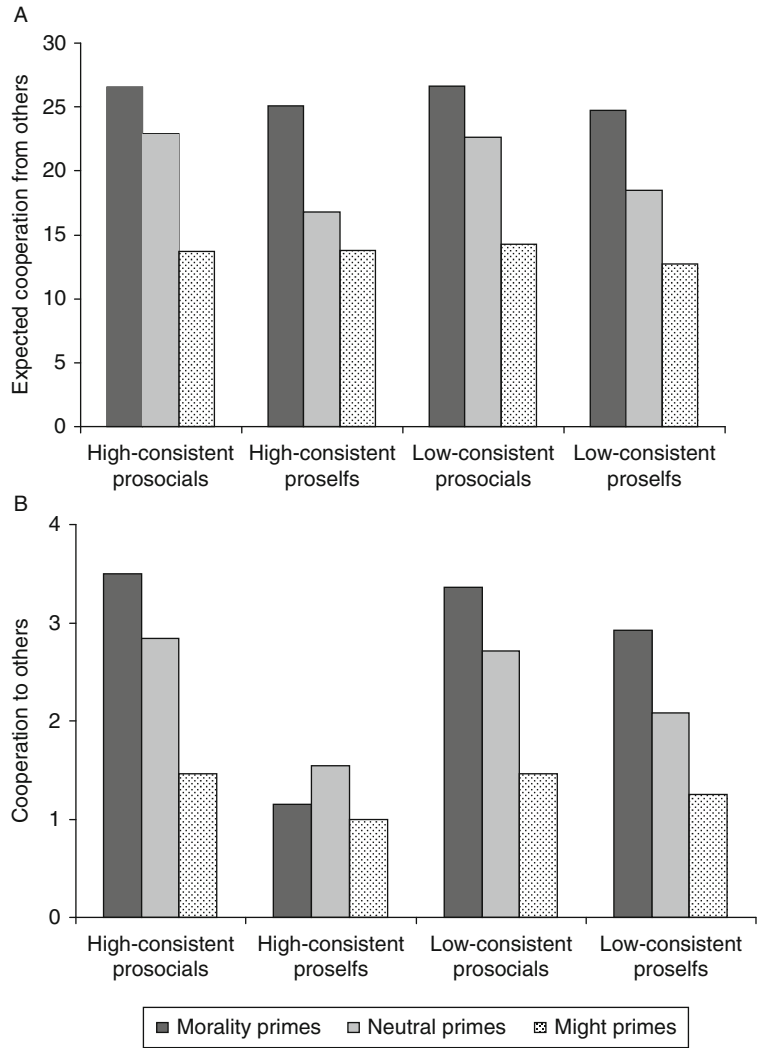


Figure 5.2 Mean expectations of others' cooperation (A) and mean cooperation behavior (B) as a function of social value orientation, consistency of social value orientation, and primes (adapted from [Smeesters et al., 2003](#), Experiment 4).

perceptions of the others among all individuals regardless of their social value orientation. For instance, participants primed with morality-related words (vs. neutral words) expected more cooperation from others in a 10-person social dilemma, whereas participants primed with might-related words expected less cooperation ([Smeesters et al., 2003](#), Experiment 4; see [Fig. 5.2A](#)). Most individuals' cooperative behavior assimilated to these

expectations (see Fig. 5.2B). Individuals with a low-consistent social value orientation (who, due to their relatively less accessible self-concept, are very sensitive to social cues; Hertel & Fiedler, 1998) and high-consistent prosocials exhibited behavioral assimilation: they behaved more cooperatively in the morality priming condition (when expecting cooperation from the other) and more competitively in the might priming condition (when expecting noncooperation from the other). However, high-consistent proselves behaved noncooperatively in both the morality and might priming conditions. When expecting cooperation from the others, high-consistent proselves tend to exploit the interaction with other, and hence, their expectations of cooperation had different implications for their behavior than it did for prosocial participants. As a result, they behaved competitively across both priming conditions.

Correlations between expected cooperation from the other and participants' own cooperative behavior were all positive (suggesting behavioral assimilation to the primed expectations), except for a negative correlation in the condition in which high-consistent proselves were primed with might concepts (higher expected cooperation led to more defection). Smeesters et al. (2008a) later replicated these findings, and showed that morality and might primes not only affected expectations regarding the cooperative behavior of the interaction with other, but also impressions of the other. Participants primed with morality-related concepts (a) perceived the other to be more moral, (b) expected more cooperation of the other, and (c) in turn behaved more cooperatively toward the other than did participants primed with might-related concepts.

The findings of Smeesters et al. (2003, 2008a) complement Herr's (1986) work, described earlier. Whereas Herr showed that people acted consistently with their perceptions of the target—when they viewed the target as hostile, they were more likely to act hostile, but if they viewed the target as nonhostile, they were more likely to act nonhostile—Smeesters et al.'s research indicated that some people may not always act consistently with their perceptions of the target—that is, high-consistent proselves act competitively when they hold a cooperative perception of another.

3.3. Summary

The studies discussed in this section provide evidence consistent with a person-perception account of behavioral priming effects. Although none of these studies reported mediational evidence (but see below), the collection of prime, task, and individual difference moderating variables in conjunction with the patterns of data on perceptions of the other provide robust supportive evidence for this mechanism that is difficult to explain with any of the other accounts for prime-to-behavior effects.



4. A SITUATION-PERCEPTION ACCOUNT OF PRIME-TO-BEHAVIOR EFFECTS

The third type of indirect account that we present proposes that the effects of primed constructs on social behavior can operate through perceptions that individuals create of their situations. People are often confronted with complex and ambiguous situations, in which it is unclear which behaviors are appropriate. Like most types of social perceptions, situational construals are both variable and consequential (Ajzen, 1991; Cialdini, Reno, & Kallgren, 1990). Construals of social situations govern expectations about how the typical individual, or most actors generally, might behave in that situation (Cialdini et al., 1990), and they can therefore serve as powerful inputs into behavior (Cialdini et al., 1990; Liberman et al., 2004). Can perceptions of situations, like perceptions of the self and others, also be affected by primes and influence behavior? Research suggests that they can. Although research has only recently begun in this area, a number of studies support the role of situation perceptions in prime-to-behavior effects.

4.1. Effect of primes on situational construal and behavior

One set of studies (Kay et al., 2004) examined how exposure to material objects from the business world (e.g., briefcases, fountain pens, boardroom tables) affects how participants construe situations and act within these situations. Because business-related objects are strongly associated with their stereotypical users (competitive businesspeople), they can increase the cognitive accessibility of the construct of competition. In one study (Kay et al., 2004, Study 2), participants were exposed to pictures of business objects or neutral objects (e.g., stapler, plug, toothbrush) before reading a vignette describing an ambiguously competitive interaction. The results demonstrated that participants exposed to business stimuli perceived the interaction as more competitive than did control participants. This suggests that participants used the accessible construct of competitiveness to disambiguate the situation. Hence, primed constructs can affect people's perceptions of situations much as it can affect perceptions of themselves and others.

In a follow-up study using the same priming stimuli (Kay et al., 2004, Study 3), participants played an ultimatum game following the priming task. In this task, they were told to make an allocation from \$10 to another person in the experiment (actually a confederate), with the stipulation that if the participant refused the allocation, neither person would receive anything. The dependent measure was the amount allocated to the other person. Results indicated that the business primes, which have been shown to elicit competitive perceptions of the interaction (as described earlier), led

participants to allocate less to the other person compared to the neutral objects. These results suggest that prime-to-behavior effects may occur through a situation-perception-based account. For more conclusive support for this as a mechanism for prime-to-behavior effects, we turn to moderation (and mediation) evidence.

4.2. Moderating variables

The two studies reported earlier suggest that primes can influence situational construals. But, when might these primed situational construals impact behavior? Two conditions that appear to make this more likely are ambiguous situations and explicit situation construals.

4.2.1. Ambiguity of the situation

Primed constructs tend to exert larger effects on judgments of ambiguous targets, because these targets require active interpretation, and accessible constructs are used in this process (Higgins, 1996). One would therefore expect perceptions of ambiguous situations to be more influenced by primed constructs than would unambiguous situations, and this is what has been found. In one experiment (Kay et al., 2004, Study 5), participants were exposed to either business-related objects or neutral objects as described earlier. They then played a prisoner's dilemma game. In one condition, the game was labeled "The Situation," which was intended to keep the norms of the game ambiguous and leave participants unsure about whether cooperation or competition was most appropriate. In the other condition, the game was labeled "The Community Game." Previous research has shown that labeling a prisoner's dilemma game as "The Community Game" suggests clear norms of cooperation (Lieberman et al., 2004), and the label therefore removes the ambiguity in the situation. Results indicated that the primes had an effect on decisions in the ambiguous game condition (in which business primes led to more competition than control primes), but not in the unambiguous game condition. Presumably, if a direct mechanism, self-perception mechanism, or person-perception mechanism were driving the effect, the ambiguity of the situation would not moderate the priming effects. The results of this study therefore support the idea that primes are most likely to affect construals of situations and subsequent behavior in ambiguous situations in which people must rely on primed constructs to disambiguate the situational norms. When the norms of the prisoner's dilemma were made explicit and unambiguous (i.e., when the game was called the Community Game) the primed constructs exerted no effect.

4.2.2. Explicitly construing the situation

Although, as we have shown, people can form construals of situations and use primed constructs to do so, people in Western cultures have been shown to have a default focus away from the situation (Gilbert & Malone, 1995). That is, unless made to focus on the situation or draw a situation construal (e.g., Krull, 1993), people from Western cultures may fail to fully interpret the situation or use it extensively as a basis for guiding their behavior. One experiment (Kay & Ross, 2003) manipulated whether participants were required to make an explicit construal of the situation before acting and assessed whether this had an effect on the extent to which situation construals mediated their behavior.

Kay and Ross (2003) primed participants with cooperation versus competition concepts in the context of a 2-person prisoner's dilemma game and measured how participants construed the game situation. Participants rated the appropriateness of five possible names for the structured interaction or game they were about to confront. Two of these names (The Wall Street Game and The Battle of Wits) connoted competition, two names (The Community Game and The Team Game) connoted cooperation, and one name connoted neither cooperation nor competition (The Numbers Game).

Additionally, they manipulated the timing of this construal. Some participants decided which move to make in the prisoner's dilemma game prior to rating the appropriateness of the names for the game. Other participants rated the appropriateness of the names and then made their moves. Hence, one half of the participants was explicitly guided to construe the situation prior to behaving (the explicit construal condition), whereas the other half was not (the implicit construal condition).

Results indicated that the primes affected participants' situation construals. Participants primed with cooperation concepts rated the cooperation names of the game as more appropriate, whereas participants primed with competition concepts rated the competition names of the game as more appropriate. The primes did not affect perceptions of the appropriateness of the neutral name. The primes also affected behavior: participants primed with cooperation concepts cooperated more than those primed with competition. However, this was the case only in the explicit construal condition, not in the implicit construal condition (see Fig. 5.3). That is, participants' behavior was only affected by the primes when they were led to determine the competitiveness of the situation prior to acting. A mediation analysis on participants from the explicit construal condition revealed that situational construal mediated behavioral priming effects for these participants. That is, the effect of the primes on participants' behavior in the prisoner's dilemma was driven by the intervening effect of the primes on how the participants perceived the situation. These results demonstrate the important role of situation perceptions in prime-to-behavior effects, especially when people consolidate their situational construals before behaving.

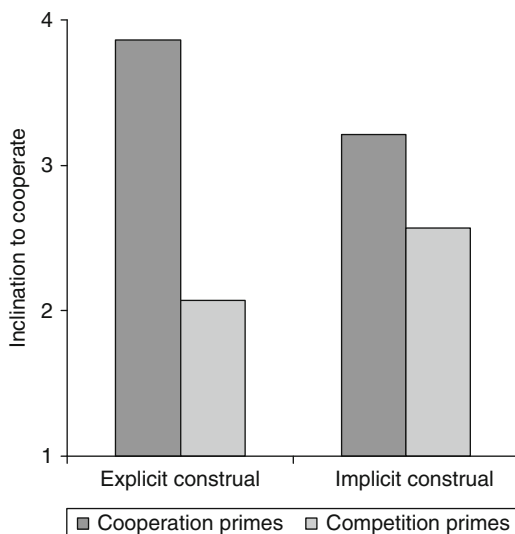


Figure 5.3 Expressed inclination to cooperate as a function of primes and explicitness of construal prior to behavioral choice (adapted from [Kay & Ross, 2003](#)).

4.3. Summary

Although the situation-perception mechanism for prime-to-behavior effects has received less empirical attention than self- and person-perception-based mechanisms, the data clearly support that situation construals can be biased by primes and affect behavior. Although people may not always spontaneously form perceptions of the situation or use them to direct behavior, when they direct their attention to the situation (e.g., because it is ambiguous), they will use accessible constructs to determine what the situation is like, and the resulting perceptions will guide behavior.

5. MODERATION OF MECHANISMS

Social behavior is inherently complex, and multiple processes can affect the way that primed constructs guide behavior. We proposed two general categories of prime-to-behavior effects: direct versus indirect accounts. The direct accounts (e.g., ideomotor account, goal-activation accounts) propose that primed constructs immediately lead to shifts in behavior without the necessity of mediating perceptual processes. The indirect accounts, as we reviewed, propose that the effect of primed constructs on behavior operate through perceptual processes of the self, the situation, or others. These two categories, each containing several more specific mechanisms, represent a

multitude of ways through which primed constructs can affect behavior, each of which can make different predictions for how and when prime-to-behavior effects will operate. Therefore, it is important to detect specific factors that systematically can predict which mechanism is most likely to determine behavior. In the research reviewed earlier, we presented several factors that moderate effects for each mechanism. However, in all of these studies, the focus was on establishing evidence for only a single operating mechanism. Recent research has begun to examine which factors can moderate *which* mechanism drives prime-to-behavior effects. In this context, we discuss the role of attentional foci. We first discuss the role of self-focus (vs. other-focus), which can determine whether a prime leads to biases self-perceptions and behavior. We then examine other-focus and its role in affecting behavior in interpersonal contexts. Last, we contrast other-focus with situation-focus to examine how these foci affect person and situation perceptions.

5.1. Self-focus

One factor that can play an important role in moderating prime-to-behavior effects is the focus of the attention of the prime recipient. It can matter whether a participant has an (external) focus on others, or rather an (internal) focus on the self. This focus may determine which perception process the primed constructs affect. If a participant has a focus on others, then the primed constructs might be used to bias perceptions of others, which in turn can affect behavior in the presence of or toward these others. However, if participants have a focus on the self, then the primed constructs might rather bias self-perceptions, which in turn can also drive behavior, but through a different process.

Recently, [DeMarree and Loersch \(2009\)](#) found support for the important role of attentional foci in steering effects of primed constructs. They subliminally primed participants with the stereotype of African Americans or Buddhist Monks, and then directed them to focus their thoughts on either themselves or their best friend. Participants then rated themselves and their friend on the trait of aggression. The results indicated that primes affected self-rated aggressiveness when their thoughts were focused on themselves, but not when their thoughts were focused on the other. Specifically, participants in the self-focus condition rated themselves, but not their friend, to be more aggressive following priming of the African-American stereotype compared to the Buddhist Monk stereotype. However, participants in the friend-focus condition rated their friend, but not themselves, to be more aggressive following the African-American prime (see also [McCulloch et al., 2008](#)). These results show that focusing on a given target (another vs. oneself) allows primed constructs to affect perceptions of that object, whereas focusing on alternative target prevented such changes.

What are the implications of this focus for behavior? This same paper (DeMarree & Loersch, 2009) showed that behavior was only affected when the participants focused on themselves. Participants acted more aggressively following the African-American prime when led to focus on themselves, but not when led to focus on their best friend. This is perhaps not surprising, because their friend was not in the experimental context and therefore perceptions of their friend were not relevant inputs into behavior. Only when primes led to changes in self-perceptions did the primes affect behavior. These findings parallel those of Wheeler et al. (2008b) in which high levels of dispositional self-reflectiveness increased the magnitude of prime-to-behavior effects. A focus on the self, in which primed constructs are actively used to interpret oneself, can increase the likelihood that primed social constructs will affect behavior.

5.2. Other-focus

The above research suggests that when attention is focused on another person, it can nullify prime-to-behavior effects, at least when that person is not present in the behavioral context. But can an other-focus lead to person-perception-mediated prime-to-behavior effects in contexts in which the perceptual target *is* present? Recently, Smeesters et al. (2009a) conducted a series of experiments in which they tested this hypothesis. They manipulated participants' level of other-focus (high vs. low) in the context of interpersonal situations. Their aim was to show that high levels of focus on the other person would increase both the likelihood that primes would bias perceptions of another person and increase the use of the resulting perceptions as a guide to behavior (showing a person-perception priming process). Hence, this would be the first demonstration that person perceptions can mediate priming effects on behavior. However, when the focus on the other was low, primes were expected to affect behavior without affecting perceptions of the other, which could potentially occur via a more direct priming process (e.g., an ideomotor mechanism) or a more indirect priming process (e.g., a self-perception process).

Smeesters et al. (2009a) tested their hypotheses using several manipulations of other-focus, such as (1) a temporary activation of other-focus (via the use of third-person pronouns), (2) an activation of other-focus via a specific decision-making situation (via a reciprocal dictator game), and (3) a dispositional activation of other-focus (via a high communal orientation). They also showed (4) that person perceptions can also mediate prime-to-behavior effects in situations in which participants do not have to perform a behavior that is explicitly directed toward others present in the situation (such as allocating outcomes to another person), but a behavior executed in the mere presence of another person.

5.2.1. Temporarily induced other-focus

In one experiment, [Smeesters et al. \(2009b\)](#) examined participants' behavior in an ultimatum game, which is an interpersonal setting that by default does not entail a natural high level of other-focus and is therefore well suited for manipulations that temporarily increase it ([Güth et al., 1982](#)). In ultimatum games, people know that the other is always better off by accepting the offer than by rejecting the offer, independent of the fairness of the offer, and therefore consideration of the other is limited ([Andreoni et al., 2003](#); [Forsythe et al., 1994](#)). Participants played the ultimatum game with another person also present in the lab. They were told to propose a division of outcomes between themselves and the other person. The other could accept or reject the proposed division. If the other person accepted the offer, the outcomes would be divided as proposed. If the other person rejected the offer, neither person would receive anything.

Before playing this game with the other, participants completed two other tasks. In the first task, they translated words from a foreign language. They received 12 sentences written in Cyrillic Russian. In each sentence, one word had to be translated. Participants in the increased other-focus condition could use only third-person pronouns (*he, she, her, him, or his*) to translate the words, whereas participants in the control (low) other-focus condition could use only neutral words, which were related to locations (city, village, place, hamlet, parish, and district). Previous research showed that other-focus can be increased by asking participants to actively use third-person pronouns in a translation task ([Sedikides, 1992](#)).

After the language task, participants performed a lexical decision task in which they were subliminally exposed to *unkindness* primes (e.g., disliked, evil-hearted, impolite, surly) or neutral primes. Following the primes, participants received the instructions for the ultimatum game. They were also given a written description of their interaction with other, which depicted him as ambiguously kind. After reading the description, participants reported their perceptions of the other's kindness and made their allocations.

The results indicated that the primes affected perceptions in the high other-focus condition, but not in the low-focus condition. More specifically, participants in the high other-focus conditions perceived the other as less kind following unkind primes compared to neutral primes. In the low other-focus condition, there was no difference in perceptions of the other's kindness across conditions. With respect to the behavior, there was only a main effect of primes: independent of other-focus, participants primed with unkindness-related words allocated less to the other than did participants primed with neutral words. The results also revealed that the prime-to-behavior effect in the high (but not low) other-focus condition was mediated by perceptions of the other. Hence, these effects resulted from two different mechanisms for the prime-to-behavior link. When other-focus was high,

a person-perception mechanism determined the priming effects: participants allocated less to the other in the unkindness-primed condition, because they perceived the other person as an unkind person. This is in line with previous research showing that individuals generally act unkindly toward unkind others (De Bruin & Van Lange, 1999a; Geanakoplos et al., 1989; Rabin, 1993). When other-focus was low, the primed concepts did not operate via the perception of the other, but still affected allocations: unkind primes led participants to behave unkindly toward the other and allocate less.

5.2.2. Other-focus as activated by the decision-making situation

Other-focus can also be induced by the requirements of the situation. Situations in which people are interdependent with each other, as in negotiations, prisoner's dilemma games, social dilemmas, and reciprocal dictator games naturally elicit high levels of other-focus. Indeed, the central theme of interdependence is that people adjust their own goals and behaviors according to their expectations about the goals and orientations of interaction partners (Holmes, 2002). In these types of situations, priming effects on behavior are likely to be mediated by perceptions of the interaction partner. Other situations, on the other hand, may not elicit a natural focus on others and, hence, priming effects on behavior might then not be mediated by perceptions of the other.

To test this proposition, Smeesters et al. (2009b, Experiment 2) primed participants and observed behavior in situations differing in interdependence. Participants were first primed with either unkindness-related words or neutral words. They were then assigned to either a nonreciprocal dictator game condition (low other-focus condition) or a reciprocal dictator game condition (high other-focus condition). In a nonreciprocal dictator game, participants must divide an amount of allocations between oneself and another person. Other-focus is by default low in this situation, because the other person must accept the proposed division of outcomes and has no opportunity to reciprocate (Ben-Ner et al., 2004; Smeesters et al., 2008b, 2009b). Hence, nonreciprocal dictator games should be less likely to lead to biased perceptions or the use of perceptions of others in guiding behavior. In a reciprocal dictator game, individuals also divide allocations between themselves and the other, but they know that the other will play the same game simultaneously. Therefore, in a reciprocal dictator game, individuals know their outcomes are also dependent on the other's decision, are more other-focused (Ben-Ner et al., 2004; Smeesters et al., 2008b, 2009b), and hence, should be likely to use their perceptions of the other as a guide to their own behavior.

Primes affected allocations in both the reciprocal and nonreciprocal dictator game conditions: participants allocated less to the other after exposure to unkindness-related words compared to neutral words. However, primes affected the perceptions of the other only in the reciprocal dictator

game condition (high other-focus), but not in the nonreciprocal dictator game condition (low other-focus). Participants in the reciprocal dictator game condition perceived the interaction with other as less kind following unkind primes compared to neutral primes. Importantly, the effect of priming on behavior was mediated by perceptions in the reciprocal dictator game condition only: participants allocated less to the other following unkindness primes, because they perceived the other as an unkind person. In the nonreciprocal dictator game condition, the prime affected the allocation behavior without affecting perceptions of the other. These findings demonstrate that characteristics of situations (such as their propensity to elicit high level of other-focus) can also determine whether an interpersonal mechanism is driving behavioral priming effects.

5.2.3. Dispositional other-focus

Individuals also differ dispositionally in the extent to which they focus on others. One variable that reflects chronic differences in other-focus is “communal orientation” (Clark et al., 1987). Clark (2008) argued that individuals’ attentional focus to self or others is determined by their relationship orientation and that high communal individuals are more other-focused and attentive to others’ characteristics than are low communal individuals (see also Mills & Clark, 1982). High communal individuals tend to determine both who is in need of their help and who will maintain (rather than violate) the communal relationship. For example, in a study by Clark et al. (1987), high communal individuals helped a sad person more than a person in a neutral state, whereas low communal individuals did not react differently. Further, high communal individuals tend to monitor others’ concern for their needs to a greater extent than low communal individuals (Clark et al., 1998). As a result, the extent to which high communal individuals help others is moderated by their perception of the others’ personal characteristics (Clark et al., 1998). High communal individuals tend *not* to help individuals who are not likely to reciprocate. Because high communal individuals are more focused on others than low communal individuals, we predicted that biased perceptions would guide prime-to-behavior effects for high communal individuals, but not for low communal individuals.

High and low communal individuals were subliminally primed with either cooperation or competition in the context of a nonreciprocal dictator game. The results showed that the primes affected perceptions of the other for high communal individuals but not for low communal individuals. Consistent with expectations, high communal individuals’ perceptions of the other assimilated to the primed concepts and directed their allocations to the other. The other received larger allocations when perceived as cooperative (in the cooperative priming condition) than when perceived as competitive (in the competitive priming condition). Low communal individuals’ allocations were affected by the primes, which directed

behavior without affecting perceptions of the other. These results indicate that communal orientation, as an antecedent of other-focus, also determines whether primes affect behavior via a person-perception process or some other mechanism.

5.2.4. The role of other-focus in a less interactive interpersonal context

Most of the research that found suggestive or conclusive evidence for an interpersonal account of behavioral priming effects studied these effects in the context of economic games (e.g., social dilemmas, prisoner's dilemma game, reciprocal dictator games, ultimatum games). In economic games, one must perform a behavior (i.e., allocating outcomes) directed *toward* others. The person-perception mechanism would be more robust if it could also apply to behaviors performed in the mere presence of another person, rather than only interpersonal actions. This would extend the domain of the current perspective beyond strictly interpersonal behaviors to a much larger class of actions.

In one experiment demonstrating such an effect (Smeesters et al., 2009a, Experiment 5), participants were assigned to either a high or low other-focus condition, which was manipulated by the translation task described earlier, before being primed with either dominance-related words (e.g., control, assertive, commanding) or submissiveness-related words (e.g., passive, docile, timid). Subsequently, they were brought to a room where they completed the framed-line test (FLT; Kitayama et al., 2003) in the presence of a confederate. The confederate was sitting on a chair and had ostensibly just finished the task. The FLT consists of several trials, in which participants are shown a square frame containing a vertical line. Participants are instructed to draw a line of identical length in a second square frame that is either larger or smaller than the first frame. Performance on this task is measured by calculating the absolute difference between these lines and the correct lines. To perform well on this task, one must ignore the context provided by the second frame. Previous research has shown that dominant individuals are more capable than submissive individuals of acting in context-independent ways, and hence, tend to perform better on the task (Kitayama et al., 2003; Stapel & Van der Zee, 2006).

The expectations were that in the low other-focus condition, primes would exert an effect on participants' behavior that was not mediated by interpersonal perceptions. This was indeed the case. The primes did not have an effect on perceptions of the confederate present in the room (see Fig. 5.4), but they did affect performance. Participants exposed to dominance primes performed better on the FLT than participants exposed to submissiveness primes (see Fig. 5.5). Additionally, videotaping of participants' posture showed that participants primed with dominance-related words adopted a more expansive posture than participants primed with

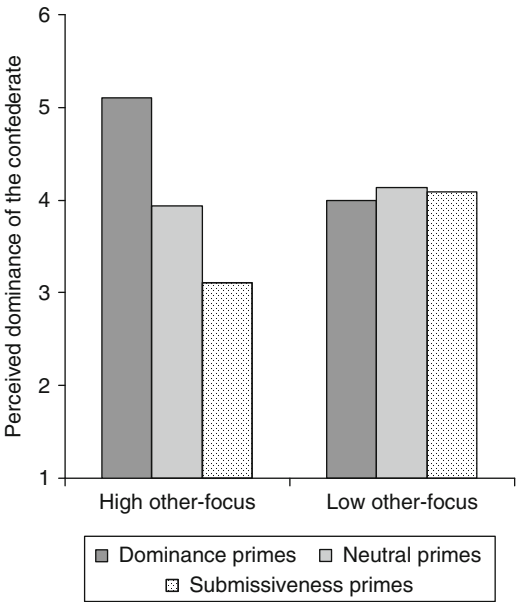


Figure 5.4 Perceived dominance of the confederate as a function of primes and other-focus (adapted from [Smeesters et al., 2009a](#), Experiment 5).

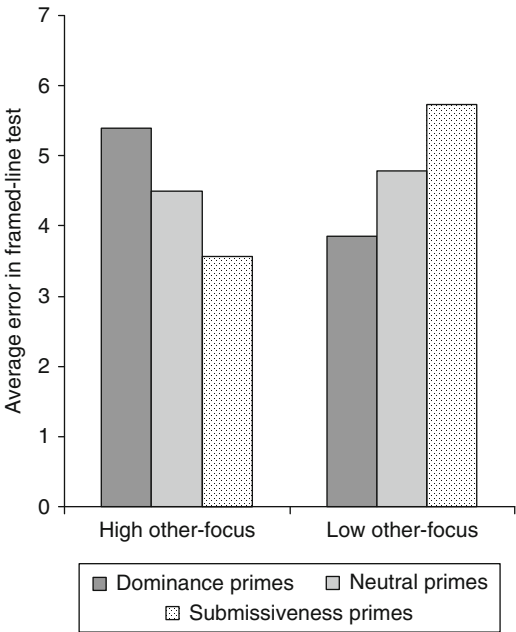


Figure 5.5 Performance on the framed-line test as a function of primes and other-focus (adapted from [Smeesters et al., 2009a](#), Experiment 5).

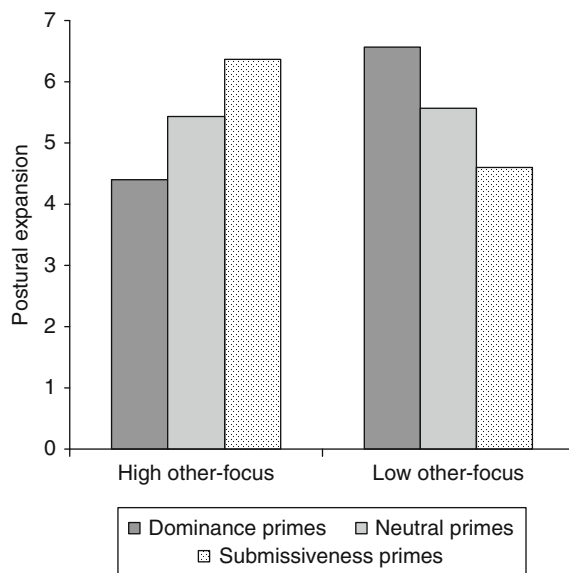


Figure 5.6 Participants' body posture as a function of primes and other-focus (adapted from Smeesters et al., 2009a, Experiment 5).

submissiveness-related words (see Fig. 5.6). Expansive posture is one non-verbal manifestation of dominance. These findings demonstrate that, when other-focus is low, participants' behavior assimilates to the primed constructs, but perceptions of others are unaffected.

In the high other-focus condition, the primes were expected to affect participants' FLT performance via a changed perception of the confederate. Although the high other-focus participants did not explicitly interact with the other, their attention was more strongly directed to that person. As a result, the primes had an assimilative effect on perceptions of the other: the confederate was perceived to be more dominant following dominance primes than following submissiveness primes (see Fig. 5.4). These perceptions affected participants' behavior. Dominance is a dimension that generates complementarity in both self-perceptions (Tiedens & Jimenez, 2003) and behavior (Tiedens & Fragale, 2003). Hence, to the extent that one perceives another person as being dominant (submissive), one should perceive oneself as submissive (dominant) and act accordingly. The findings in the high other-focus condition were consistent with this idea. Participants primed with dominance constructs (compared to submissiveness and neutral constructs) acted more submissive as evidenced by (a) worse performance on the FLT (see Fig. 5.5) and (b) the adoption of a constricted posture (see Fig. 5.6). Participants primed with submissiveness constructs (compared to dominance and neutral constructs) acted more dominant as

evidenced by (a) a better performance on the FLT (see Fig. 5.5) and (b) the adoption of an expanded posture (see Fig. 5.6). Each of these effects was mediated by perceptions of the other. Primes led to assimilation in perceptions of the other, which led to contrast in behavior. These results bring strong support for a person-perception priming account, as they show behavioral priming effects mediated by person perceptions in a less interactive interpersonal context. The mere presence of another person can be sufficient for such perception-based priming effects, so long as one is focused on the other person. These results also confirm again that multiple mechanisms can underlie prime-to-behavior effects and that the mediating mechanism depends on whether one has an other-focus mindset. Further, the findings demonstrate that prime-to-behavior effects can sometimes operate in opposite directions, depending on the operating mechanism. In this experiment, participants' behavior assimilated to the primed constructs in the low other-focus conditions, but their behavior contrasted away from the primed constructs in the high other-focus condition (due to assimilative priming shifts in the perception of another person).

5.3. The role of person and situation-focus

As reviewed in Sections 3 and 4, primes can affect both person perceptions and situation perceptions, and as such determine social behavior. A next question would be to examine when individuals are more inclined to form person perceptions or draw situation perceptions, especially in those cases in which there is information about a person in a specific situational context. Past research on priming effects on individuals' perceptions has focused primarily on person perceptions, but less on situation perceptions. In fact, in most empirical studies of the effects of priming on person perceptions, the experimental paradigms seem to be structured to maximize direct effects of construct accessibility on person perceptions and minimize the influence of construct accessibility on situation perceptions. This is achieved by multiple means: (1) the target person's actions are generally described as relatively free of specific social situations or as being invariant across a variety of situations, (2) the target person's behavior is described ambiguously, and (3) the attention of the participants is explicitly guided (via the experimental instructions) toward the person rather than the situation. In real-world contexts, however, actions are embedded in social contexts, behavior varies in its ambiguity, and individuals seek to understand both persons and situations.

When these constraints are removed, effects of construct accessibility on perceptions of situations should increase. First of all, situation perceptions should be more likely to be influenced by accessible constructs when there is some ambiguous information about the situation to be processed. As shown by Kay et al. (2004), primed constructs affect the construal of

situations that contain ambiguous information but not those that are unambiguous. Second, individuals' actions also vary in ambiguity—person perceptions assimilate to primed constructs only when the actors are depicted ambiguously (Higgins, 1996). Therefore, the likelihood of primes affecting situation perceptions should depend on the relative ambiguity of the situation versus the actor. When persons are relatively more ambiguous than the situation, person perceptions should be more likely to be directly biased by primed constructs. However, when actors are relatively less ambiguous, primed constructs may instead first bias perceptions of the situation. Third, whether primed constructs bias situation perceptions versus person perceptions depends on the focus of the perceiver. Participants in person-perception experiments are often explicitly instructed to focus on the person. Even without any instructional focus manipulation given, individuals often have a default focus on interpreting persons, rather than situations (Gilbert & Malone, 1995). However, when the person is relatively less ambiguous compared to the situation, individuals may shift their focus to disambiguating the situation. Additionally, perceivers may sometimes increase their initial focus on the situation when their objective is to interpret what a social situation is like (Krull, 1993). Hence, a situation-focus should increase the likelihood of primes biasing perceptions of the situation.

Although ambiguous targets that are the focus of attention are more likely to be directly biased, situation perceptions can also affect how unambiguous actors are perceived. A person's unambiguous behavior can be interpreted differently depending on how the situation is perceived. For instance, the same unambiguously competitive behavior might be perceived differently depending on whether the situation is perceived to be normatively competitive or cooperative. Specifically, the same competitive behavior of a person might in fact be perceived as *less* competitive within a competitive setting compared to a cooperative setting. This is in line with Kelley's (1971) notion of discounting. This notion suggests that the role of a given cause for an action (e.g., the person's disposition) is discounted to the extent that facilitating causes (e.g., congruent situational norms) are present. On the other hand, a given cause for an action is augmented when inhibiting causes (e.g., incongruent situational norms) are present. Thus, an unambiguous behavior can be attributed more or less to a person's disposition depending on whether the situation facilitates or hinders that behavior.

Kay et al. (2008, Studies 2–3) tested these predictions. Participants were primed with either cooperation or competition. Next, they read about a person whose behavior in a situation was either ambiguously competitive or unambiguously competitive. Participants engaged in a person-perception process when confronted with the description of the ambiguous player. This person was perceived as more competitive following competitive primes than following cooperative primes. However, when participants were confronted with the unambiguous player description, they first engaged in a

situation-perception process: the situation was perceived to be more competitive following competition primes than following cooperation primes. This situation perception then mediated the effect of primes on perceptions of the unambiguous actor. Specifically, the person, described as unambiguously competitive, was perceived to be more competitive when participants were exposed to cooperation primes (because the situation was construed as cooperative) than when they were exposed to competition primes (because the situation was construed as competitive). Thus, the perception of the unambiguous person contrasted away from the primed constructs, as a result of the assimilative priming effect on the perception of the situation.

Whether perceptions of people or situations are initially biased can also depend on the perceiver's focus. When participants have an initial focus on the person, their interpretation depends on whether the other person is ambiguous or not. If the person is unambiguous, there is no need for interpretation. If the person is ambiguous, the person needs to be disambiguated, and the interpretation of that person should assimilate to the most accessible constructs. Consistent with this reasoning, in one study (Kay et al., 2008, Study 3), participants were primed with cooperation or competition before reading a description of an ambiguously or unambiguously competitive person. Before reading the instructions of the game, participants were told that this study was a study about how different people behave in the same situation, which was used to induce a person focus. The results replicated those of earlier person-perception research (e.g., Higgins et al., 1977; Stapel et al., 1997): the primes had an assimilation effect on the perception of the ambiguous person only. The primes did not have any effect on the construal of the situation.

In another condition, instructions focused perceivers on the situation, by telling them that it was a study about how people react to different situations. In these conditions, the primes significantly affected participants' perception of the ambiguous game, regardless of whether the person was described as ambiguously competitive or unambiguously competitive. That is, the situation was perceived to be more competitive following competitive primes compared to cooperative primes. Further, situation construals affected perceptions of the unambiguously (but not the ambiguously) described player of the prisoner's dilemma. The actor's unambiguously competitive behavior was perceived to be more competitive in the cooperative priming condition than in the competitive priming condition.

Wheeler et al. (2009), using a crosscultural paradigm, extended these findings to a behavioral context. Instead of manipulating person versus situation-focus, they examined whether the same effects would occur among Westerners (Dutch participants) versus Easterners (Chinese participants), who are presumed to differ in their default levels of situational versus person focus. These individuals were given information about an interaction other's past behavior in a prisoner's dilemma game. This target person

was described as either ambiguously competitive or unambiguously competitive. Participants were also primed with cooperative or competitive words. It was expected that Westerners, who tend not to focus on the situational context, would use the primed constructs to disambiguate the other person (because they have a default focus away from the situation; Gilbert & Malone, 1995), which would then be used to determine their behavioral action toward him. Easterners, on the other hand, were expected to apply the primes to the situation (Gilbert & Malone, 1995). The findings confirmed these predictions. The Westerners perceived the ambiguously described other as less cooperative and, as a result, allocated less to the other in the competitive priming condition compared to the cooperative priming condition (the primes had no effects on the Westerners' perception of the situation or the unambiguous other). Easterners showed a different, but also predicted, pattern of results. The primes had a significant effect on Easterners' perception of the situation (but no direct effect on person perception)—that is, Easterners interpreted the situation as more cooperative when primed with cooperative words compared to competitive words. These biased situation perceptions, then, directed behavior in two different ways depending on the ambiguity of the other. In the case of an ambiguous other, cooperative primes led Easterners to behave more cooperatively toward the other because they perceived the situation as cooperative. Likewise, those primed with competitive words perceived the situation as competitive and therefore behaved competitively toward the ambiguous other. In the case of an unambiguous other, however, cooperative and competitive primes led to contrast effects on behavior. The nonambiguous target, as a function of the mediating role of the situational perceptions, was now perceived as more competitive following the cooperative primes and more cooperative following competitive primes. Easterners' allocation behavior to the other then assimilated to their perceptions of the other.

The results of Kay et al. (2008) and Wheeler et al. (2009) demonstrate that situation perceptions can also be made in the context of person-perception tasks and that these situation perceptions can affect person perceptions and behavior toward the target person. These findings illustrate the complex and dynamic nature of perception processes that can play a role in priming effects on humans. Accessible cognitive constructs can affect both person and situation perceptions, and both types of perceptions can mediate prime-to-behavior effects (Kay & Ross, 2003; Smeesters et al., 2009a).

5.4. Summary

The studies discussed in this section demonstrate that multiple processes can determine behavior in the same context. However, which specific process regulates behavior at a certain moment depends on the attentional focus of the prime recipient. This attentional focus, which can be either situationally

or dispositionally activated, determines which target (e.g., oneself, another, or the situation) will be affected by the primed constructs, and subsequently determine social behavior. As a result, prime-to-behavior effects may reveal themselves through different mechanisms, which can in some cases lead to opposite effects. Whether or not any particular focus will lead primed constructs to affect behavior will depend on the focus of the recipient, whether the perceptual target of that focus is sufficiently ambiguous for primed construct to affect perceptions, and whether that target is relevant for determining behavioral outputs. These findings illustrate again the dynamic and complex nature of human behavior. The research to date on moderators of prime-to-behavior mechanisms is currently in its infancy. It has examined primarily how the focus of the prime recipient and the characteristics of the perceptual target can modify the mechanism, though we expect that future research will uncover many additional variables that can have similar effects.



6. THE ROLE OF CONSCIOUSNESS

One final issue worthy of note concerns the level of conscious awareness involved in these different mechanisms. The direct routes have been postulated to operate entirely outside of the awareness of the prime recipient. The role of consciousness in these indirect, perceptual routes can be more variable. In all of the prime-to-behavior studies to date, the prime recipients remain unaware that the prime played any role in their behavior. That is, in the debriefing of participants in these experiments, participants are unable to identify the priming task as having any effect on their behavior. Additionally, many of the priming tasks themselves activate constructs without awareness. For example, when participants are primed subliminally, they are unable to identify the content of the priming manipulation. In other manipulations, such as essay tasks, participants may be aware of the content of the prime (because it is self-generated), but remain unaware of its influence on their subsequent behavior.

Where perceptually based prime-to-behavior effects may sometimes diverge from direct effects is in awareness of some portion of the intervening process. Many of the studies reported in this chapter assessed participants' conscious perceptions of a perceptual target (e.g., another person in the environment), and participants have been shown to base their behavior on these conscious perceptions. However, perceptually based prime-to-behavior effects are not limited to these situations. Primes can also implicitly affect perceptions. For example, many studies have shown that primes can affect self-perceptions as assessed by implicit self-concept measures, and some researchers have argued that these measures can tap perceptions that

are not consciously accessible to individuals, but nevertheless have the potential to shape behavior. In addition, recent research has demonstrated that, like self-perceptions, perceptions of norms can also be measured implicitly, and that these implicit norms exert unique effects on behavior (Spencer et al., 2009).

Last, the behavior of prime recipients may involve different levels of conscious awareness. As noted at the beginning of the chapter, primed constructs have been shown to affect a wide variety of behaviors, from relatively low-level responses (e.g., reaction times) to more complex behaviors (e.g., economic decisions or academic performance). Although it is possible that the passive and nonconscious activation of behavioral representations or goals could account for some of these more complex behaviors, it is also quite possible that these behaviors are based, at least in part, on conscious reasoning. Indeed, in many between-participants experimental situations, participants may be unable to identify the between-participants manipulation as responsible for their behavior (because they are aware of only one level of the experimental manipulation), even though they may have full awareness of the content of that manipulation and consciously use it as an input into their behavior. Hence, as argued elsewhere (e.g., Wheeler & Petty, 2001; also see Kay & Ross, 2003), many prime-to-behavior effects (as well as many effects in traditional social psychological paradigms) may involve some blend of conscious and nonconscious processes.



7. CONCLUSION

Early research generally assumed that priming effects on behavior operate in a direct fashion—that is, primes activate behavioral or goal representations which then determine one's behavior without the need for any mediating attentional process. In this chapter, we reviewed a large body of studies showing that primed constructs do not always operate directly on social behavior. Instead, primed constructs can bias perceptions of the self, the situation, or others, and these biased perceptions can subsequently determine one's behavior. This body of research contains both moderation and mediation evidence that is not easily accounted for by direct prime-to-behavior effects. Rather, they show that there are multitudes of means by which construct accessibility can be translated into behavioral output. Primed constructs do not operate in isolation, but combine with the dispositional characteristics of the prime recipient and the social context in which the actor operates, including both the people in that context and its attendant norms. Although indirect prime-to-behavior effects are surely more complicated than those depicted by the direct accounts, they explicitly acknowledge the complexity of human behavior and the diversity of inputs that affect even our simplest actions.

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MENTAL CONSTRUAL AND THE EMERGENCE OF ASSIMILATION AND CONTRAST EFFECTS: THE INCLUSION/EXCLUSION MODEL

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Contents

1. Introduction	320
2. The Inclusion/Exclusion Model	322
2.1. Overview	322
2.2. Information accessibility	324
2.3. Information use	325
2.4. Size of context effects	329
3. Beyond Mere Accessibility: Determinants of Information Use	330
3.1. The “aboutness” filter: Why does it come to mind?	330
3.2. The representativeness filter: Does it describe the target?	334
3.3. Conversational relevance: Is this part of the common ground?	348
3.4. Coda	353
4. Processing Variables: Cognitive Capacity, Motivation, and Processing Style	354
4.1. Processing capacity and motivation	354
4.2. Differences in processing style	356
4.3. Individualistic versus collectivistic mind sets	358
4.4. Other mindsets	359
5. “Assimilation <i>or</i> Contrast” Versus “Assimilation <i>and</i> Contrast”	360
6. Concluding Remarks	363
Acknowledgments	364
References	364

Abstract

The inclusion/exclusion model provides an integrative framework for conceptualizing the emergence of assimilation and contrast effects in evaluative judgment. The model assumes that feature-based evaluative judgments require

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a mental representation of the object of judgment (target) and of a standard to which the target is compared. Both representations are context sensitive and based on the information that is most accessible at the time. The way in which accessible information influences the judgment depends on how it is used. Information that is used in forming a representation of the target results in assimilation effects; information that is used in forming a representation of the standard results in contrast effects. How information is used depends on (i) individuals' beliefs about whether the information was brought to mind by some irrelevant influence, (ii) the information's perceived representativeness for the target, and (iii) conversational norms that influence the perceived appropriateness of information use. We summarize the core assumptions of the inclusion/exclusion model, review empirical evidence bearing on it, and highlight its integrative nature.



1. INTRODUCTION

Our daily life is full of experiences that confirm a truism of psychology: human judgment is context dependent. The same objective temperature can feel warm or cold depending on yesterday's weather; the grade we assign to a student's paper may be influenced by our earlier impression of the student or by the quality of the previous paper we read; and being affiliated with a prestigious research institution may cast a positive light on our own contributions, until we compare ourselves with the Nobel laureate next door. In all cases, judgments pertaining to the same target may be profoundly influenced by the context in which they are made. At the most general level, context effects can be classified as assimilation or contrast effects, depending on the direction of the contextual influence. We refer to *assimilation effects* whenever the judgment reflects a positive relation between the implications of some piece of information and the resulting judgment. For example, thinking of a domain of life in which we are particularly happy increases general life satisfaction, whereas thinking of a domain in which we are particularly unhappy decreases general life satisfaction (e.g., Schwarz et al., 1991). We refer to *contrast effects* whenever the judgment reflects a negative (inverse) relation between the implications of some piece of information and the resulting judgment. For example, watching a TV show with highly attractive actors decreases the perceived attractiveness of one's own significant other (e.g., Kenrick & Gutierrez, 1980). Note that the terms "assimilation" and "contrast" merely describe the direction of contextual influences; they are silent with respect to the specific underlying process.

Not surprisingly, the context dependency of human judgment has found broad attention in psychological research and numerous theories have been offered to conceptualize the emergence of assimilation and contrast effects. Suls and Wheeler (2007) provide an excellent overview of the historical

developments. They trace the introduction of the term “contrast” to von Helmholtz (1866), who investigated perceptual distortions, and follow the theoretical developments from early experimental psychologists (e.g., Wundt, 1894) to influential classic theories in social psychology (e.g., Asch, 1952; Sherif & Hovland, 1961) and current work in social cognition. Throughout these developments, theorists have emphasized either (i) the influence of contextual information on the representation of the standard to which the target is compared or (ii) its influence on the representation of the target itself. Inspired by research in psychophysics, one group of theories focuses on the distribution of contextual stimuli, which is assumed to influence the adaptation level (Helson, 1964), comparison standard (e.g., Thibaut & Kelley, 1959), or scale anchor (e.g., Ostrom & Upshaw, 1968; Parducci, 1984; Volkmann, 1951). Theories of this type highlight contextual influences on the standard and excel at specifying conditions under which contrast effects are likely to emerge, which they consider the more robust (if not default) outcome; however, they pay little attention to contextual influences that may affect the mental representation of the target itself. The latter possibility is central to two other groups of theories. One approach, going back to Asch’s (1946) observation of primacy effects in impression formation, emphasizes that most stimuli have some degree of ambiguity and require interpretation. As numerous priming studies in social cognition demonstrated, these ambiguities are resolved by interpreting the information in terms of the most accessible applicable concept (e.g., Higgins et al., 1977; Srull & Wyer, 1979); which concept is most likely to come to mind is itself a function of contextual influences on concept accessibility (see Higgins, 1996 for a review). This approach considers assimilation effects the most likely outcome, unless specific correction conditions are met. A second approach, going back to Sherif and Hovland (1961), emphasizes categorization processes and assumes that stimuli assigned to the same category are assimilated to one another, whereas stimuli assigned to different categories are contrasted with one another. This approach traces both assimilation and contrast at least in part to changes in the representation of the target, which, depending on the specific model and the prevalent theorizing of the time, are conceptualized as perceptual distortions (e.g., Sherif & Hovland, 1961) or the incorporation of general category knowledge into the representation of the stimulus (e.g., Wyer & Carlston, 1979).

These distinct theoretical approaches and their conceptual relatives have developed in different areas of application—like psychophysics, person perception, and attitude research—and the processes they emphasize are not mutually exclusive. In an attempt to integrate these processes into a coherent conceptual framework that is consistent with current social cognition theorizing, we presented the inclusion/exclusion model (IEM) of assimilation and contrast effects (Schwarz & Bless, 1992a, 2007). The IEM emphasizes the context-dependent construal of mental representations of

targets and standards and highlights that a given piece of accessible information can result in assimilation as well as contrast effects, depending on whether it is used in forming a representation of the target or of the standard. In the two decades since the initial studies, core predictions of this model have fared well in empirical tests. Moreover, other researchers (most notably [Biernat, 2005](#); [Mussweiler, 2003](#); [Stapel, 2007](#)) have substantially advanced our understanding of context effects. This chapter reviews what has been learned and updates the IEM in light of new insights gained over the last two decades.



2. THE INCLUSION/EXCLUSION MODEL

2.1. Overview

The IEM ([Schwarz & Bless, 1992a](#)) assumes that feature-based evaluative judgments require two mental representations: one of the target of judgment and one of a standard against which the target is evaluated. Both representations are formed on the spot, drawing on information that is most accessible at the time of judgment. How accessible information influences the judgment depends on how it is used. Information that is used in forming a representation of the target results in assimilation effects: including positive features in the representation of the target results in a more positive representation and hence a more positive judgment, whereas including negative features results in more negative judgment. The size of assimilation effects increases with the amount and extremity of positive (negative) information included in the representation of the target. These assumptions are not controversial and simply acknowledge that, *ceteris paribus*, a given target of judgment is evaluated more positively the more positive attributes we perceive and more negatively the more negative attributes we perceive.

Information that is excluded from the representation formed of the target results in contrast effects. Contrast effects can take two forms. First, excluding a positive attribute results in a less positive representation of the target and hence in a less positive judgment; conversely, excluding a negative attribute results in a less negative representation and hence a less negative judgment. Like assimilation effects, this type of contrast effect (which we refer to as a subtraction effect) is solely based on changes in the representation of the target; accordingly, it is limited to evaluations of this specific target. The size of subtraction-based contrast effects increases with the amount and extremity of positive (negative) information excluded from the representation of the target. Second, information that has been excluded from the representation of the target may also be used in constructing a representation of a standard. If this information is positive, it results in a more positive representation of the standard, relative to which the target is

evaluated less positively; conversely, if the information is negative, it results in a more negative standard, relative to which the target is evaluated more positively. These comparison-based contrast effects generalize to all targets to which the standard is applied. Their size increases with the amount and extremity of positive (negative) information used in constructing the standard. Accordingly, the IEM predicts the direction (i.e., assimilation vs. contrast) and size of context effects, as well as their generalization across targets. We elaborate on these assumptions in more detail in the following sections.

The model assumes that the operation of all variables that can elicit assimilation or contrast effects can be traced to these simple mental construal principles. What renders research on assimilation and contrast effects complex is not the complexity of the underlying construal processes, but the multitude of variables that can influence them: *any* variable that influences whether a given piece of information is used in constructing a representation of the target or of the standard can determine the direction of the resulting context effect. Most theoretical models in this field focus on a small number of variables, namely the ones central to their respective substantive area of application, be it psychophysical judgments (e.g., [Parducci, 1965](#)), stereotyping (e.g., [Biernat & Manis, 2007](#)), or person perception (e.g., [Stapel, 2007](#)). We address these and related models when we review the respective variables.

Although our presentation of the IEM focuses on feature-based evaluations, that is, evaluations based on declarative information, it is worth noting that the role of experiential information can also be conceptualized in these construal terms. First, when relevant features are highly accessible, the experienced ease of recall suggests that there are many of them, consistent with [Tversky and Kahneman's \(1973\)](#) availability heuristic. Accordingly, the resulting representation is more positive when positive features are easy rather than difficult to bring to mind (for reviews, see [Schwarz, 1998, 2004](#)). This increases the size of assimilation effects when the features are used in representing the target, but the size of contrast effects when they are used in representing the standard. Experienced difficulty of recall exerts the opposite influence. Second, people may draw on their apparent affective reaction to the target as a basis of judgment, essentially asking themselves, "How do I feel about this?" (for a review, see [Schwarz & Clore, 2007](#)). In doing so, they may misread preexisting moods (e.g., [Schwarz & Clore, 1983](#)), affective responses to contextual information (e.g., [Winkielman et al., 1997](#)), or the positive affect resulting from processing fluency (e.g., [Reber et al., 1998](#); [Winkielman & Cacioppo, 2001](#)) as their response to the target. This apparent affective response to the target either may be used in lieu of a more feature-based representation or may be considered an additional relevant feature, depending on feature accessibility and the judge's processing motivation. In either case, the apparent affective response results in

assimilation effects, here in the form of affect-congruent judgments (e.g., Schwarz & Clore, 1983). The influence of experiential information is eliminated when the informational value of the recall experience or affective reaction is undermined through (mis)attribution manipulations, thus rendering the experience irrelevant to the target at hand (for a review, see Schwarz & Clore, 2007). Given space constraints, we will only occasionally comment on experiential information in the present chapter; however, an integration of declarative and experiential information within the current construal framework provides a promising avenue for future research.

Next, we revisit the assumptions of the model in more detail.

2.2. Information accessibility

Social cognition theorizing attributes much of the variability in human judgment and behavior to the fact that social situations differ with respect to the information that is most likely to come to mind and attract attention (for numerous examples, see Bless et al., 2004; Fiske & Taylor, 2008; Moskowitz, 2005). The IEM shares this assumption. It further shares the assumption that information search is truncated as soon as enough information has been brought to mind to form a judgment with sufficient subjective certainty (Bodenhausen & Wyer, 1987; Higgins, 1996; Wyer & Srull, 1989). Hence, only the most accessible applicable information will be used in constructing mental representations of the target and the standard. Moreover, the use of highly accessible information is accompanied by a metacognitive experience of fluent processing, which lends the information additional credibility and weight (Schwarz, 1998, 2004).

These assumptions imply that mental representations are flexible and that the same target may be differentially represented, depending on what comes to mind at a given point in time. Numerous strands of theorizing, from classic attitude studies (e.g., Asch, 1940) to recent research into context-dependent knowledge representation (e.g., Yeh & Barsalou, 2006) and the nature of cognition situated (e.g., Smith & Semin, 2004), share this perspective. However, the resulting prediction of pronounced context effects in evaluative judgment conflicts with traditional attitude theories (for a review, see Eagly & Chaiken, 1993), which assume that evaluations of targets are stored in memory and can simply be retrieved when needed. Although stored evaluations may be accessible when they have been generated very frequently and/or very recently, the IEM assumes that most people most of the time will need to form judgments *in situ*. Nevertheless, the resulting judgments can sometimes be quite stable across time and situations. From a construal perspective, similar judgments across time and situation reflect the use of mental representations with similar evaluative implications (see Lord & Lepper, 1999; Schwarz, 2007 for more detailed discussions).

First, similar judgments across time are expected when the context renders the same information temporarily accessible at both points in time (e.g., Lord et al., 2004) or when the judgment is predominantly based on chronically accessible information; the latter situation may arise when the context does not provide relevant information (e.g., Sia et al., 1997). Moreover, repeated use of information increases its accessibility in memory and the likelihood that it comes to mind again at a later occasion; this self-perpetuating nature of information accessibility (Wyer & Srull, 1989) fosters similarity of repeated evaluations. Second, even when judges draw on different inputs at time 1 and time 2, they will only arrive at different judgments when the new inputs have different evaluative implications; merely replacing one piece of information with a different one of similar valence will not change the evaluative judgment (e.g., Sia et al., 1997). Finally, even when the evaluative implications of accessible inputs differ from time 1 to time 2, the resulting shift in judgment may be small, depending on the variables that determine the size of context effects (addressed below). In short, observed stability in judgment does not (necessarily) imply that a previously formed judgment has been retrieved; instead, construal models of judgment, like the IEM, offer a coherent conceptualization of stability as well as change and identify conditions under which each one is to be observed.

2.3. Information use

Going beyond mere information accessibility, the IEM holds that the specific influence of a given piece of accessible information depends on how it is *used*. As already noted, information used in forming a representation of the target results in assimilation effects, whereas information used in forming a representation of the comparison standard results in contrast effects. Accordingly, the *same* piece of accessible information can have opposite effects, depending on its use.

Numerous variables can influence information use. The IEM imposes some order on these variables by relating them to a small number of general questions that bear on their informational value for the task at hand, as shown in Fig. 6.1. At the first step, people need to determine if information that happens to come to mind may bear on the task. This step simply acknowledges that some accessible information (“the door bell rings,” “it’s hot”) may be clearly unrelated to the issue a person is thinking about; such irrelevant information is ignored and does not affect mental representations of the target or of the standard. Information that may potentially bear on the task is considered in more detail and its use depends on three task-related filters. The *first* filter pertains to *why* a given piece of information comes to mind: Does it come to mind because it is relevant to the judgment at hand or does it come to mind due to an irrelevant

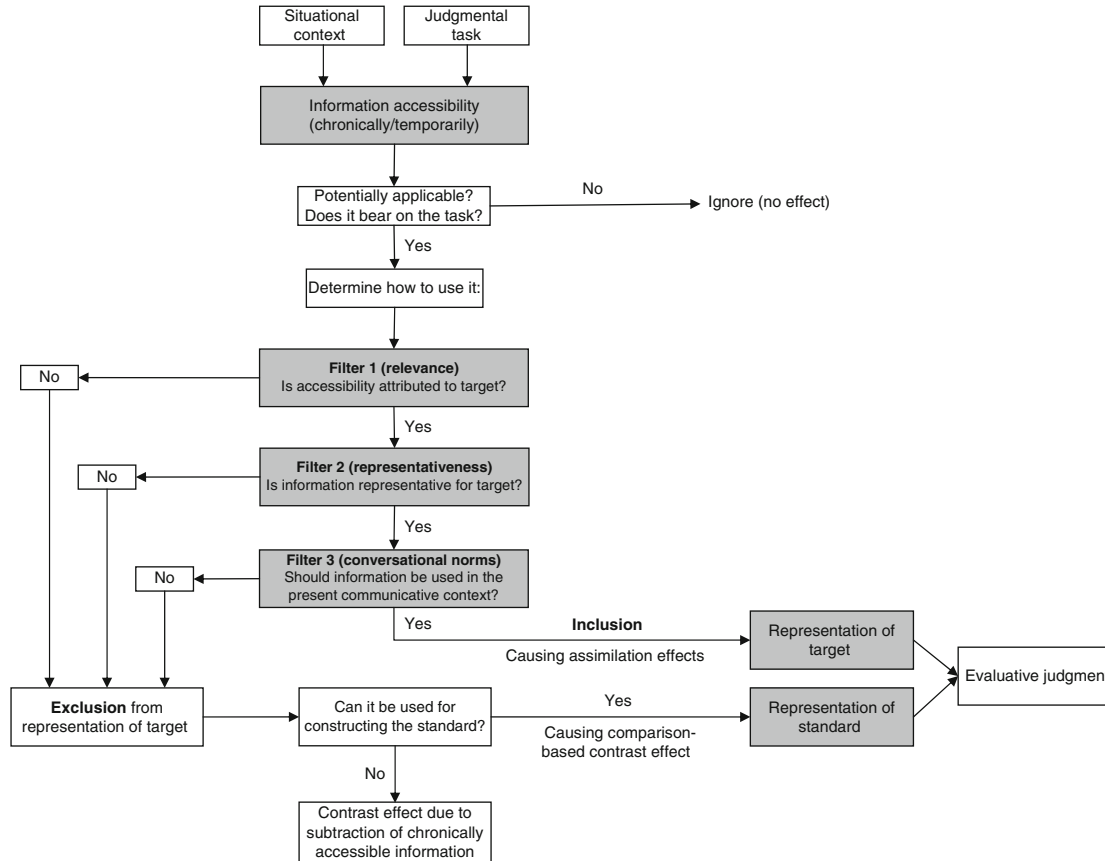


Figure 6.1 The inclusion/exclusion model.

influence? Most of the time, people assume that whatever comes to mind is “about” what is in the focus of their attention, or why else would it come to mind now? This lay intuition, which Higgins (1998) refers to as the “aboutness” principle, reflects that accessibility is not random. In daily life, what comes to mind is meaningfully related to our current situation, goals, and concerns (Förster & Liberman, 2007). Accessible information will only pass this “aboutness” filter if individuals perceive it as their reaction to the target; they will exclude accessible information when they believe that it was brought to mind by some irrelevant influence, even when the information is potentially relevant to the issue at hand (Lombardi et al., 1987; Martin, 1986; Strack et al., 1993). The *second* filter concerns the representativeness of the information for the target. Information that is not perceived as representative will not pass this filter and will not be used in forming a target representation. This decision is driven by the numerous variables known to influence the categorization of information, including, for example, the information’s extremity (e.g., Herr, 1986) and typicality (e.g., Bless & Wänke, 2000), the malleability of the category (e.g., Hilton & von Hippel, 1990), and the salience of category boundaries (e.g., Strack et al., 1985). A *third* filter acknowledges that many judgments are made in a conversational context, where information use is governed by conversational norms (Grice, 1975; Hilton, 1995; Schwarz, 1994). These norms ask speakers, for example, to consider the recipient’s knowledge, to take the previously established common ground into account, and to avoid redundancy in their utterances. Such considerations influence the use of information in social contexts and hence the construction of targets and standards. For example, information that has been previously reported to the same recipient is excluded from the representation of the target when its repeated use would violate conversational norms of nonredundancy, resulting in contrast effects (e.g., Schwarz et al., 1991; for a review, see Schwarz, 1994, 1996). We return to a detailed discussion of these filters and relevant empirical evidence in the following sections.

Information that passes all three filters is included in the representation formed of the target. Evaluations based on this representation reflect the implications of the included information, resulting in assimilation effects. Suppose, for example, that citizens are asked to evaluate the trustworthiness of politicians and a scandal-ridden exemplar, say Richard Nixon, comes to mind. If the exemplar passes all three filters, it will be included in the representation formed of the target category “politicians,” resulting judgments of low trustworthiness, as shown in the left-hand panel of Fig. 6.2 (Schwarz & Bless, 1992b). Information that fails any one of the three filters is excluded from the representation formed of the target. However, the excluded information is still highly accessible and may come to mind when judges construct a representation of the standard. To continue the scandal example, suppose citizens are asked to evaluate the trustworthiness of a

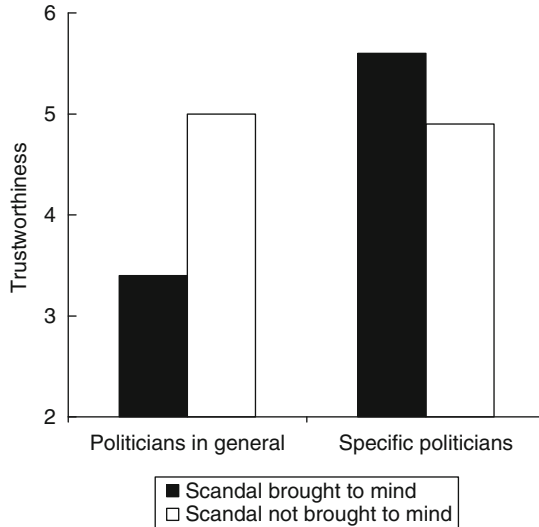


Figure 6.2 Judgments of trustworthiness of politicians in general and of specific exemplars as a function of thinking about a political scandal. Higher scores reflect higher trustworthiness. Data from Schwarz and Bless (1992b).

specific politician, say Newt Gingrich, rather than the trustworthiness of politicians in general. In this case, the scandal-ridden exemplar fails the representativeness filter—Richard Nixon is not Newt Gingrich. But compared to Nixon, Gingrich now seems more trustworthy than he otherwise would, reflecting a contrast effect due to changes in the standard, as shown in the right-hand panel of Fig. 6.2 (Schwarz & Bless, 1992b).

In the scandal example, the inclusion/exclusion operations are driven by the categorical relation between the context information (Nixon) and the target (politicians in general vs. Gingrich), which is one of many variables bearing on the representativeness filter. Any specific politician is a member of the superordinate category “politicians in general” and can hence be included in that representation, unless he or she fails other filter tests. Lateral categories (Nixon vs. Gingrich), on the other hand, are mutually exclusive. Hence, exemplar–category assimilation and exemplar–exemplar contrast are a common finding. Note, however, that assimilation and contrast effects can only be observed if the information that enters into the representation of the target or the representation of the standard differs in valence from other information used in constructing these representations. For example, including a scandal-ridden exemplar in the representation of “politicians in general” will only hurt the trustworthiness of the group when the exemplar’s misdeeds are more despicable than the misdeeds of other exemplars included in the representation of the group; similarly, the exemplar

will only help Newt Gingrich when the exemplar's misdeeds are more despicable than the misdeeds of other exemplars used in forming a standard to which Gingrich is compared.

2.4. Size of context effects

The IEM's predictions about the size of assimilation and contrast effects follow directly from its representational assumptions and the set-size principle of models of information integration (for reviews, see [Anderson, 1981](#); [Wyer, 1974](#)). We first consider the size of *assimilation effects*. Not surprisingly, including a piece of contextual information in the representation of the target has a more pronounced impact the more extreme its evaluative implications are. In terms of the above example, the negative impact of including a scandal-ridden politician in the representation of the group increases with the severity of the scandal. In addition, the size of assimilation effects increases with the amount of contextual information added to the representation of the target. Hence, including three scandal-ridden politicians in the representation is worse than including only one. Conversely, the influence of a given piece of accessible information decreases with the amount and extremity of other information included in the representation of the target; the top panel of [Fig. 6.3](#) illustrates this aspect. For example, the more trustworthy politicians are included in the representation, the lower the impact of adding an untrustworthy one.

The size of *subtraction-based contrast effects* follows the same logic. The higher the extremity and the larger the amount of information that is excluded from the representation of the target, the larger the resulting contrast effect. Excluding a particularly untrustworthy politician from the representation of the group results in a more favorable group judgment than excluding a less extreme exemplar; similarly, excluding several untrustworthy exemplars is better for the group than excluding only one. Conversely, the impact of excluding a given piece of information decreases with the amount and extremity of other information in the representation, consistent with the set-size principle.

Finally, the size of *comparison-based contrast effects* follows the same logic as the size of assimilation effects, except that the rules of the set-size principle now apply to the representation formed of the standard. On the one hand, the extremity of the standard, and the size of the resulting contrast effects, is a function of the amount and extremity of the information used in constructing its representation. Conversely, the impact of a given piece of information used in constructing the standard decreases with the amount and extremity of other information used in this construction; the bottom panel of [Fig. 6.3](#) illustrates this aspect. We return to these issues when we consider the empirical evidence (for a more detailed discussion, see [Bless et al., 2003](#)).

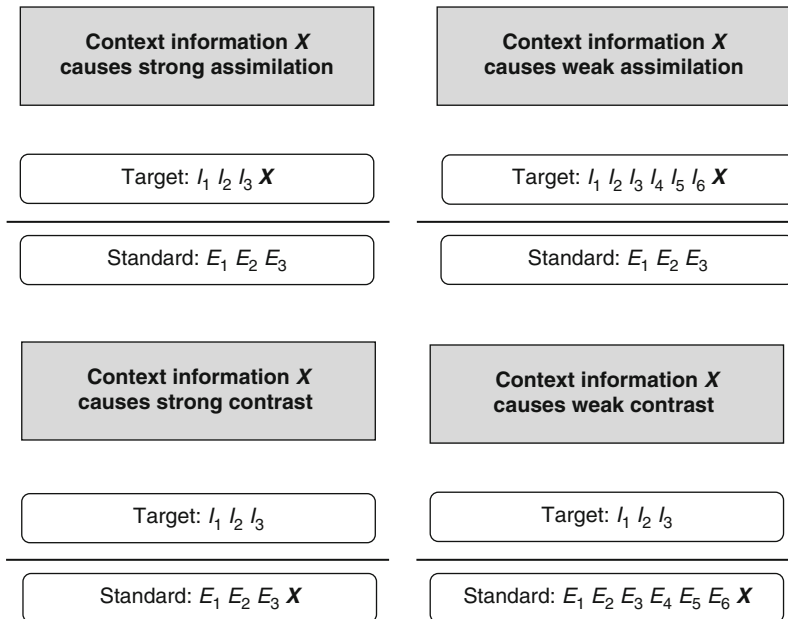


Figure 6.3 Size and direction of context effects as a function of categorization and amount of competing information (X is the context information, I_n is the other information entering into target representation, and E_n is the other information entering into standard representation).

3. BEYOND MERE ACCESSIBILITY: DETERMINANTS OF INFORMATION USE

Having reviewed the basic logic of the IEM, we now turn to the available evidence and focus on variables that influence how a given piece of accessible information is used. These variables can be organized in terms of three general filters, as discussed earlier, and our discussion of these filters follows the flow of the model shown in Fig. 6.1.

3.1. The “aboutness” filter: Why does it come to mind?

The first filter acknowledges that individuals are usually motivated to form accurate representations of the world; they hence attempt to avoid contamination by irrelevant information that may be brought to mind by incidental influences (for discussions, see Kunda, 1999; Strack & Hannover, 1996; Wilson & Brekke, 1994). Accordingly, accessible information must pass a first filter to be used in constructing a representation of the target: “Is this

coming to mind because it is my response to the target or is it merely brought to mind by some irrelevant influence?" In most cases, individuals will assume that their thoughts are "just their own spontaneous reaction to the stimulus" (Higgins, 1996, p. 150), making it likely that the information passes this filter. This lay intuition is consistent with the basic dynamics of accessibility in everyday life: what is most likely to come to mind is knowledge related to one's current situation, goals and concerns, and the target in the focus of one's attention (Förster & Liberman, 2007). When individuals become aware that information may come to mind for the "wrong" reason, it does not pass this filter and is excluded from the representation formed of the target.

Empirical support for this rationale comes primarily from conceptual priming studies, which manipulate the accessibility of trait concepts in an ostensible "first" study and assess their impact on the impression formed of an ambiguous target in a "second" study. Drawing on individual differences in participants' memory for the priming episode, Lombardi et al. (1987; see also Liberman et al., 2007; Newman & Uleman, 1990) observed contrast effects in impression formation when participants could spontaneously recall the primes at the end of the study, but assimilation effects when they could not. Presumably, participants who were able to recall the primes were more likely to be aware of their potential influence. Experiments that manipulated awareness support this conclusion. Varying the subtlety of the priming manipulation, Martin (1986) observed that subtle priming procedures elicited assimilation effects on the impression formed of the target person, whereas blatant priming procedures elicited contrast effects. Holding the priming procedure itself constant, Strack et al. (1993) did or did not ask participants at the end of the "first" study to list the words they learned. As shown in Fig. 6.4, they obtained assimilation effects on the impression formed when participants were not reminded of the primes, but contrast effects when they were. Throughout, participants drew on the primed concepts in forming an impression when they could consider these concepts part of their spontaneous reaction to the target, but not otherwise.

3.1.1. Awareness of an influence

Numerous variables can influence the likelihood that individuals become aware of a potential contextual influence (for a review, see Wilson & Brekke, 1994). One of them is the subtlety of the priming procedure (Martin, 1986). Awareness is particularly likely when the priming episode is poorly disguised and transparently related to the target; conversely, it is particularly unlikely when the primes are presented subliminally (e.g., Bargh & Pietromonaco, 1982). Although contrast effects can nevertheless be observed under subliminal priming conditions (e.g., Stapel & Blanton, 2004; Winkielman et al., 1994), their emergence under these conditions reflects the operation of other filters, rather than an influence of awareness.

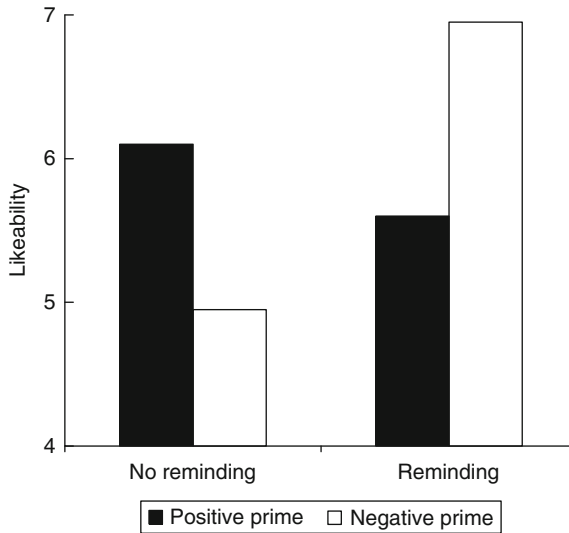


Figure 6.4 Target ratings as a function of valence of priming and reminding of the priming episode. Higher scores reflect more positive evaluations. Data from [Strack et al. \(1993\)](#).

The likelihood that people become aware of an unwanted influence further increases with the extremity of the prime (e.g., [Moskowitz & Skurnik, 1999](#)) and its salience in the context in which it is presented, and decreases with the fluency with which the primes can be processed (e.g., [Greifeneder & Bless, in press](#)). Moreover, individuals are more likely to become aware of an irrelevant influence when the contextual information is externally presented rather than internally generated (e.g., [Mussweiler & Neumann, 2000](#)).

Note, however, that awareness that some information may have been brought to mind by a contextual variable does not necessarily imply that the information entails the risk of an “undue” influence. In this regard, the reviewed priming experiments differ markedly from natural situations: the priming procedures and the target evaluation are introduced as unrelated studies, which implies that one should not influence the other. In daily life, conversations build on the common ground established by previous utterances, which should be taken into account rather than ignored. Information brought to mind by a previous utterance is therefore less likely to be perceived as coming to mind for the “wrong” reason ([Schwarz, 1996](#)). In addition, any information brought to mind as part of answering a question is self-generated rather than externally presented, further reducing the likelihood that it is perceived as a potentially unwanted influence ([Mussweiler & Neumann, 2000](#)). As a result, awareness of the priming episode reliably

produces contrast effects in priming experiments, whereas awareness of the content of a preceding question fails to do so in survey interviews (Schwarz, 1996) and many other situations; what is crucial is not awareness *per se*, but awareness of an unwanted influence.

3.1.2. Contrast effects

As the reviewed experiments illustrate, awareness of an unwanted influence results in contrast effects. This was first observed by Martin (1986; see also Martin & Shirk, 2007; Martin et al., 1990), who proposed a set/reset model that traces assimilation as well as contrast to changes in the representation of the target. According to his account, the primed concepts are included in the representation of the target when perceivers are not aware of an influence, resulting in an assimilation effect. When perceivers are aware of an influence, the primed concepts are excluded from the representation, which should eliminate the assimilation effect. In doing so, however, perceivers may find it difficult to distinguish “between their reaction to the priming task and their reaction to the target” (Martin et al., 1990, p. 28) and may exclude information that was actually brought to mind by the target rather than the prime. This overcorrection results in contrast effects relative to a control that was never exposed to the primes. The IEM shares these assumptions and treats Martin’s (1986) reset effect as a subtraction effect; it further assumes that subtraction effects can be elicited by many other variables, not addressed in the set/reset model. In addition, the IEM assumes that information that is excluded from the representation of the target may be used in constructing a representation of the standard, which may affect judgments of all targets to which the standard is applied.

Whereas changes in mental representations play a key role in the set/reset model (Martin, 1986) as well as the IEM, other models assume that awareness of an unwanted influence can elicit corrections that are not associated with changes in the mental representation of the target or standard (cf. Strack, 1992; Strack & Hannover, 1996; Wegener & Petty, 1995, 1997; Wilson & Brekke, 1994). These models suggest that perceivers essentially ask themselves “How may this have influenced me?” and then correct their judgment on the basis of a relevant naïve theory. For example, when asked to rate the weather in the Midwest after having rated the weather in Hawaii, perceivers may become aware that Hawaii may bias their assessment of Midwestern weather. To correct for this influence, they may adjust their rating upward (“I’d give the Midwest a 3, but perhaps that’s only because Hawaii is so much better, so lets make it a 5”). Such theory-driven corrections occur at the output stage and do not require assumptions about changes in the underlying representations. They are particularly likely when there is no untainted information on which a representation could be based or when constructing an alternative representation seems especially burdensome. We would assume, for example, that theory-driven

corrections are most likely when an unwanted influence is perceived *after* an initial judgment has already been made, whereas changes in target representation are more likely when an unwanted influence is perceived *prior* to judgment formation. This possibility awaits systematic testing.

3.2. The representativeness filter: Does it describe the target?

Information that passed the first filter (“Does it come to mind for the wrong reason?”) next needs to be assessed with regard to its relevance to the target of judgment: Does this information represent some relevant attribute of the target? Most of the variables that drive the emergence of assimilation and contrast effects are related to this second filter. When the answer is affirmative, the information is included in the representation of the target, resulting in an assimilation effect; otherwise, it is excluded from the representation of the target and may be used in constructing a representation of the standard, resulting in a contrast effect. Numerous variables familiar from categorization research can influence these decisions; they include the fit between the context information and the target category (variously referred to as similarity, feature overlap, and so on), the salience of category boundaries, the heterogeneity of the target category, and many others. Unfortunately, testing the causal influence of these variables always poses a methodological challenge: context information that is similar versus dissimilar to the target, for example, does not only differ with regard to its “fit” with the target category, but also differ in many other respects. Hence, we begin with a review of experiments that avoided this ambiguity by keeping the context information constant, varying its categorization by other means. Subsequently, we turn to the influence of category structure and address how the influence of contextual information changes when it is subordinate, lateral, or superordinate to the target category. Both of these bodies of research highlight the role of categorization processes in ways that are not contaminated by substantive differences in the context information. Having reviewed this work, we then turn to more messy variables that include changes in the attributes of the context information and note the parallels in the resulting effects. Finally, our discussion of the representativeness filter returns to the influence of contextual information on the interpretation of features of the target and revisits the trait-priming phenomena discussed earlier.

3.2.1. Manipulating representativeness independent of context and target

The extent to which people perceive a piece of context information as representative of the target will usually depend on characteristics of the context information and the target. As noted, this makes it difficult to isolate

the role of categorization processes *per se* because different degrees of context–target fit are confounded with other attributes. To avoid this ambiguity, we developed procedures that allowed us to keep the context and target information constant, while explicitly manipulating their categorization through targeted questions (e.g., [Bless & Schwarz, 1998](#); [Bless et al., 2001](#); [Stapel & Schwarz, 1998](#)). Accordingly, these studies bear on the consequences of different categorizations of the same information; they are relatively silent, however, on the variables that would spontaneously elicit different categorizations (which we address later).

One of these studies took advantage of an ambiguity associated with the position of President of the Federal Republic of Germany. On the one hand, the German President is a formal figure head with limited power (comparable to the Queen in the United Kingdom) and is expected to stand above the daily fray of party politics; on the other hand, only career politicians with a long history in party politics ever reach this position. This allowed us ([Bless & Schwarz, 1998](#)) to ask participants different political knowledge questions about the highly respected politician who served as President at the time, Richard von Weizsäcker. Some were asked of which party von Weizsäcker “has been a member of more than 20 years”; others were asked which office von Weizsäcker holds “that sets him aside from party politics.” As the IEM predicts, participants’ subsequent evaluations of von Weizsäcker’s party were more positive when the knowledge question invited his inclusion in, rather than his exclusion from, the representation formed of his party. A similar ambiguity arose in American politics when Colin Powell, at the time the highly respected Chairman of the Joint Chiefs of Staff, decided to join the Republican party, but declined to run as its presidential candidate. This allowed [Stapel and Schwarz \(1998\)](#) to ask some participants whether they know which party Powell joined, but to ask others whether they know for which party Powell did not want to run. Again, participants evaluated the Republican party more favorably when the knowledge question invited Powell’s inclusion in, rather than his exclusion from, the representation formed of the party.

In a related approach, [Bless and Wänke \(2000\)](#) presented all participants with the same list of favorable and unfavorable TV shows, which were moderately typical for TV shows in general. To manipulate participants’ perceptions of the shows’ typicality, some participants were asked to select two shows that they considered “typically favorable”; others were asked to select shows that they considered “atypically favorable”; and yet others to select shows they considered “typically unfavorable” or “atypically unfavorable,” respectively. Because all shows were pretested to be moderately typical, participants’ selections were completely driven by their favorability; hence, participants always selected the same two favorable (or unfavorable) shows, no matter whether they were asked to select “typical” or “atypical” ones. [Figure 6.5](#) shows the results. Classifying a show as “typical” invited its

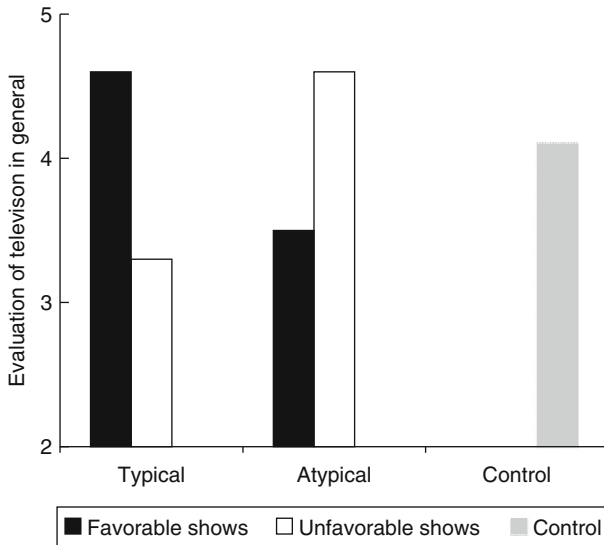


Figure 6.5 Evaluation of television programs in general as a function of the valence of television shows brought to mind and their manipulated typicality. Higher scores reflect more positive evaluations. Data from [Bless and Wänke \(2000\)](#).

inclusion in the superordinate category “TV shows,” resulting in assimilation effects; hence, TV shows in general were rated more favorably when the question asked for the identification of “typically favorable” rather than “typically unfavorable” ones. Conversely, classifying a show as “atypical” invited its exclusion from the superordinate category, resulting in contrast effects; in this case, TV shows in general were rated less favorably when the question asked for the identification of “atypically favorable” rather than “atypically unfavorable” shows. The TV evaluations of a control group fell in between.

As a final example, consider the influence of *ad hoc* categorizations on the evaluation of consumer products ([Wänke et al., 1999](#)). All participants were asked to evaluate a bottle of wine and this target of judgment was always presented in the same context, comprised of lobster, cigarettes, and a TV guide. To manipulate the categorization of these products, some participants were asked which products belonged to the category food, whereas others were asked which products need to be sold within a short time. The correct answer to the first question is “wine and lobster,” resulting in an *ad hoc* category that includes these products and a remaining *ad hoc* category that includes “cigarettes and TV guides.” The correct answer to the second question is “lobster and TV guides,” resulting in an *ad hoc* category that includes these products and a remaining category that includes “wine and cigarettes.” As predicted, the target product “wine” was evaluated more

favorably when assigned to an *ad hoc* category with lobster rather than with cigarettes; the evaluations of control participants, who received no categorization question, fell in between.

In combination, these categorization experiments show that the impact of a given piece of context information depends on its use; merely knowing what comes to mind is not sufficient to predict the direction of its impact. Judgment models that focus solely on which features are rendered accessible by the context lack a mechanism that accounts for a central prediction of the IEM: the *same* information can elicit assimilation as well as contrast effects, depending on the categorization processes that determine its use in forming a representation of the target or standard.

3.2.2. Category structure

One of the major, and most robust, determinants of information use is the categorical relation between contextual information and the target, which bears directly on the extent to which context information can be included in the representation of the target. First, the context information can be subordinate to the target; for example, a scandal-ridden politician (i.e., an exemplar of the general category “politicians”) may come to mind when a person evaluates the trustworthiness of politicians in general (i.e., a superordinate target category). As already seen (Fig. 6.2), subordinate information is usually included in the representation of superordinate targets (unless other filter operations require exclusion), resulting in assimilation effects, here in form of lower trustworthiness of politicians in general (Schwarz & Bless, 1992b). Second, the context information can be lateral to the target; for example, the target may be another specific politician, rather than politicians in general. Lateral categories are mutually exclusive, resulting in contrast effects, here in form of increased trustworthiness of other individual politicians (Fig. 6.2; Schwarz & Bless, 1992b). Third, the context information can be superordinate to the target; for example, one may learn that a given target person is a member of the category “politicians.” As numerous stereotyping studies illustrate (cf. Fiske & Neuberg, 1990; Fiske et al., 1999; Macrae & Bodenhausen, 2000), this invites the inclusion of general category knowledge in the representation of the exemplar, resulting in an assimilation of the exemplar to the category (unless other filter operations require exclusion).

Context information subordinate to the target Unless other filter operations prompt exclusion, subordinate context information is included in the representation of superordinate targets, resulting in assimilation effects. We already discussed several examples, like the influence of a scandal-ridden politician on judgments of politicians in general (Bless et al., 2000; Schwarz & Bless, 1992b), the influence of highly respected politicians on their party (Bless & Schwarz, 1998; Stapel & Schwarz, 1998), and the

influence of “typical” TV shows on evaluations of their genre (Bless & Wänke, 2000). The underlying logic is at the heart of attempts to change stereotypes (i.e., representations of high-level categories) by bringing atypical exemplars to mind (e.g., Bless et al., 2001; Bodenhausen et al., 1995; Kunda & Oleson, 1995, 1997; Weber & Crocker, 1983). Empirically, such attempts are often unsuccessful because exemplars that are atypical for the group fail other tests of representativeness, which prompts their exclusion (e.g., Bless et al., 2001); we return to this issue in a later section. The same logic also underlies the observation that evaluations of a brand (a superordinate category) are a function of its accessible products (i.e., subordinate exemplars; e.g., Keller & Aaker, 1992; Loken & John, 1993; Milberg et al., 1997; Wänke et al., 1998).

However, the conceptual logic is not limited to exemplars and their membership categories. For example, Schwarz et al. (1991; see also Strack et al., 1988) asked survey respondents to report their marital satisfaction and their general life satisfaction in different question orders. When the general life-satisfaction question preceded the marital satisfaction question, the answers correlated $r = 0.32$. Reversing the question order, however, increased the correlation to $r = 0.67$. This reflects that the marital satisfaction question brought marriage-related information to mind, which was included in the representation formed of the superordinate target “my life.” Accordingly, happily married respondents reported higher, and unhappily married respondents reported lower general life satisfaction in the marriage–life than in the life–marriage order.

Consistent with the IEM’s assumptions about the size of context effects, such assimilation effects decrease with the amount of other information included in the representation of the target. In the life-satisfaction study (Schwarz et al., 1991), the correlation of marital satisfaction and life satisfaction dropped from $r = 0.67$ to $r = 0.43$ when questions about three different life domains (job, leisure time, and marriage) preceded the general life-satisfaction question, thus bringing a more diverse range of relevant information to mind. Extending these findings to a natural context, Simmons et al. (1993) observed in an election study that the influence of earlier questions on subsequent political judgments decreased as the election neared, presumably because an increasing amount of relevant information became chronically accessible over the course of the campaign. Similarly, Bless et al. (2000) found that the negative impact of bringing a scandal-ridden politician to mind on judgments of politicians in general decreased with the number of other politicians included in the representation of the group, as shown in the left-hand panel of Fig. 6.6.

Context information lateral to the target Lateral categories are mutually exclusive. For example, Newt Gingrich and Richard Nixon are both politicians, but Gingrich is not Nixon. Accordingly, context information

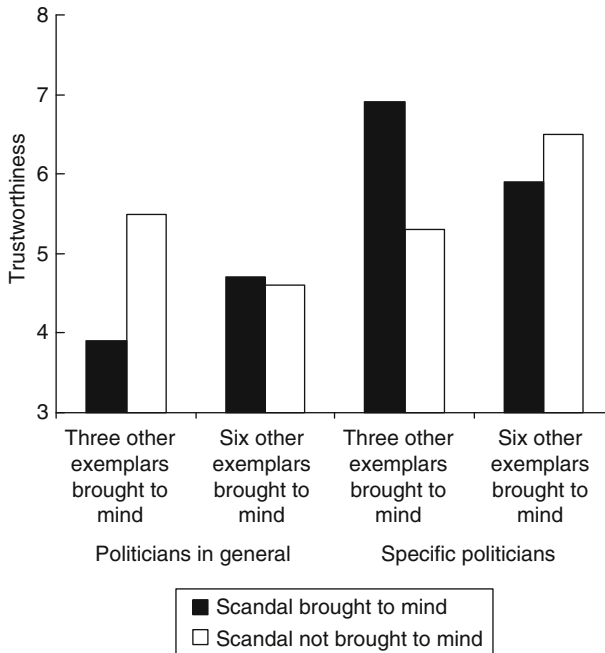


Figure 6.6 Evaluations of trustworthiness of politicians in general and in specific as a function of a scandal activation and amount of additional activation. Higher scores reflect higher trustworthiness. Data from [Bless et al. \(2000\)](#).

that stands in a lateral relationship to the target cannot be included in the representation of the target. However, it may come to mind when the target is evaluated and may be used in constructing a standard, resulting in contrast effects. As already seen in [Fig. 6.2](#), thinking of a scandal-ridden politician is therefore beneficial for the trustworthiness of other specific politicians, although detrimental for the group in general ([Schwarz & Bless, 1992b](#)). The opposite effects of exemplars on judgments of their peers (lateral) and judgments of their group (superordinate) give rise to numerous asymmetries in public opinion, which we review below.

The size of the observed interexemplar contrast effects follows the set-size logic of the IEM. For example, adding a scandal-ridden politician to a standard that includes only three trustworthy politicians should result in a more negative standard, and hence a more pronounced contrast effect, than adding the same politician to a standard that includes several six politicians. Empirically, this is the case as shown in the right-hand panel of [Fig. 6.6](#) ([Bless et al., 2000](#)).

Given that exemplars are mutually exclusive lateral categories, exemplar priming usually elicits contrast effects on judgments of other exemplars.

This observation is central to the comparison component of Stapel's (2007) interpretation–comparison model. Note, however, that the crucial element is not the priming of an exemplar *per se*, but the categorical relation between the exemplar and the target: exemplars elicit contrast effects on judgments of other exemplars (lateral targets), but assimilation effects on judgments of their group (a superordinate target). Moreover, when exemplars are thought about in terms of their traits, the accessible trait concepts may subsequently be used in interpreting ambiguous target information, as seen in numerous trait-priming studies (e.g., Higgins et al., 1977; Srull & Wyer, 1979). This possibility is central to the interpretation component of the interpretation–comparison model (Stapel, 2007) and we return to it below. Finally, when the context and target exemplar are both assigned to the same superordinate category and little individuating information is available, perceivers may draw on general category information in judging the lateral exemplars. Such reliance on the superordinate category gives rise to assimilation effects (e.g., Brown et al., 1992; Seta et al., 1979). From the perspective of the IEM, all of these processes are specific instantiations of more general mental construal processes that determine the representation of targets and standards.

A consideration of category structure also sheds new light on the observation that models in the psychophysical judgment tradition (e.g., Ostrom & Upshaw, 1968; Parducci, 1965; Volkman, 1951) consider contrast “the default option because it seems more robust and explainable than assimilation” (Suls & Wheeler, 2007, p. 17). Studies in this tradition address how one stimulus affects judgments of another, lateral stimulus. The resulting contrast effects parallel the observation of interexemplar contrast reviewed earlier; would the researcher ask for judgments of the average weight or brightness of the superordinate category, an equally robust assimilation effect likely would be obtained.

Context information superordinate to the target As a final possibility, accessible context information may stand in a superordinate relation to a subordinate target. For example, the context may bring a general social category to mind of which the target is a member. Unless other filter operations prompt exclusion, this relation entails a categorization of the target as a member of the superordinate category, which licenses the inclusion of general category knowledge in the representation of the target (Smith, 1995), resulting in assimilation effects. This is the familiar case of stereotyping effects, which reflect that information about the superordinate category is included in the representation of the target exemplar (for reviews, see Fiske et al., 1999; Kunda, 1999; Macrae & Bodenhausen, 2000). Consistent with the set-size principle of the IEM, these assimilation effects are more pronounced, the less other, individuating information about the target is accessible. Of course, numerous other variables can

influence this categorization process, undermining the otherwise observed assimilation effect. Before we review these variables, it is worth noting the implications of category structure for familiar public opinion phenomena.

Implications As our discussion illustrates, the categorical relation between context information and the target of judgment is a very general and powerful determinant of information use. On the one hand, subordinate context information can be included in the representation of superordinate targets and superordinate context information can be included in the representation of subordinate targets. Both of these inclusion operations result in assimilation effects on the respective target judgment; the size of these effects follows the set-size principle, here applied to the representation of the respective target. On the other hand, lateral context information cannot be included in the representation of the target but can be used in constructing a standard, resulting in contrast effects. The size of these comparison-based contrast effects also follows the set-size principle, but here applied to the representation of the standard. These regularities have important implications.

Most importantly, the same piece of context information can have opposite effects, depending on its categorical relation to the target of judgment. This is at the heart of many asymmetries in public opinion. For example, Americans distrust Congress but trust their own representative (Erikson et al., 1988). This follows directly from the observation that any scandal-ridden member of Congress can be included in the representation formed of Congress, but serves as a standard relative to which one's own representative looks rather trustworthy. Hence, the misbehavior of their peers is good for individual politicians, but bad for any superordinate category to which they belong—be it their party, Congress, or the political class as a whole (Bless et al., 2000; Schwarz & Bless, 1992b; Stapel & Schwarz, 1998). Similarly, all minorities—including women, gays, and racial-ethnic groups—report that discrimination against their group is a serious problem; yet, they also report that their own personal experience is more benign (Glynn et al., 1999). In representative samples, such an asymmetry should not be observed—after all, the best estimate of the experience of a group as a whole is the average of the individual experiences of its members. However, the asymmetry again follows from the logic of the IEM. Extreme cases of discrimination are more accessible than less extreme ones. These memorable cases are included in the representation of discrimination against the group, resulting in reports of high discrimination. Yet, for individual reports, the same accessible cases result in an extreme standard, relative to which most members' own experiences pale, giving rise to the observed asymmetry.

These dynamics also point to divergences in the interests of individuals and the groups to which they belong. Much like a crook hurts his party,

a highly respected and trustworthy politician helps it—but only at the expense of his peers, who suffer from comparisons with their respected colleague (Stapel & Schwarz, 1998) and benefit from comparisons with a crook (Schwarz & Bless, 1992b). Similarly, having a “star” in one’s department is good for the image of the department (a superordinate category), but bad for every individual faculty member who falls short of the standard set by the highly accessible star (Wänke et al., 2001). In these cases, little-known individuals enjoy a benefit: lacking individuating information about them, perceivers turn to their category membership to arrive at a judgment. This gives them the opportunity to benefit from the impact of the “star” on the category, whereas their better-known peers suffer from the comparisons that individuated representations enable. Unfortunately, this advantage reverses when the highly accessible exemplar is a crook. In this case, little-known individuals suffer from the crook’s impact on the category representation, whereas his better-known peers benefit from the standard the crook provides.

Although category structure is a particularly robust determinant of information use, cognitive and social psychologists have identified numerous other variables that influence how a given piece of information is categorized. The IEM holds that *any* variable that influences categorization also influences the emergence of assimilation and contrast effects. We now turn to some of these variables.

3.2.3. Typicality, similarity, and feature overlap

Not surprisingly, perceived similarity or typicality is a major determinant of categorization. Exemplars that seem typical for their superordinate category are more likely to be included in the category representation than atypical ones; by the same token, exemplars that are similar to one another are more likely to be assigned to the same category than dissimilar exemplars. In both cases, perceived similarity is a function of feature overlap and increases with the proportion of shared attributes (Tversky & Gati, 1978). Although typical exemplars are likely to be included in representations formed of their superordinate categories, their impact on subsequent category judgments is relatively limited: Given large feature overlap, the evaluative implications of a typical exemplar are redundant with the category information. “Atypical” exemplars, on the other hand, are less likely to be included; but *if* included, they provide new information about the category.

Implications for stereotype change These dynamics received considerable attention in models of stereotype change, where researchers hope that including an atypical exemplar in the representation of the category will attenuate stereotyped group perceptions (for reviews, see Hewstone, 1994; Kunda, 1999; see also Lord & Lepper, 1999; Smith & Zárate, 1992). In consumer psychology, the same logic has been applied to brand

perception (for reviews, see [Bless & Greifeneder, 2008](#); [Loken, 2006](#)). Although a review of this literature is beyond the scope of this chapter, the IEM draws attention to two frequently overlooked risks. First, trying to change stereotypes by exposing perceivers to an atypical exemplar can backfire, making the group seem all the more stereotypical. This is expected when the atypical exemplar is used in constructing a standard of comparison rather than a representation of the group. Second, even when stereotype change is successful, it may come at a cost to the exemplar. Although the exemplar's inclusion in the representation of the group attenuates stereotypical perceptions of the group, it is also likely to increase stereotypical perceptions of the exemplar. This parallels our previous discussion of the diverging interests of groups and their members.

Methodologically, these possibilities are difficult to test with the procedures commonly used in stereotyping research, which usually rely on manipulating either the attributes of the exemplar or the attributes of the category. As noted earlier, such procedures necessarily confound categorization processes with attributes of the context and/or target information. Avoiding this complication, [Bless et al. \(2001\)](#) presented all participants with the same description of a moderately atypical exemplar. To manipulate the exemplar's categorization, they asked some participants questions that drew attention to typical attributes. In this case, the exemplar was included in the representation of the superordinate category, resulting in less stereotypical perceptions of the group in general (an assimilation effect), as shown in [Fig. 6.7](#). However, other participants were asked questions that drew attention to atypical attributes of the exemplar. In this case, the exemplar was excluded from the category and used in constructing a standard, resulting in more stereotypical perceptions of the group in general (a contrast effect). Hence, accessible atypical exemplars can help or hurt the perception of their group, depending on their use (see also [Kunda & Oleson, 1997](#); [Maurer et al., 1995](#); [Wänke et al., 2003](#)). These inclusion/exclusion operations were also reflected in judgments of the exemplar itself, as shown in [Fig. 6.7](#). Including the exemplar in the representation of the group resulted in more stereotypical perceptions of the exemplar, whereas excluding the exemplar from the representation of the group resulted in less stereotypical perceptions of the exemplar.

In combination, this pattern of findings highlights an unfortunate conflict: including an atypical exemplar in the representation of the group attenuates stereotyping of the group, but increases stereotyping of the exemplar that brings the desired group change about; conversely, excluding an atypical exemplar from the representation of the group attenuates stereotyping of the exemplar, but increases stereotyping of the group. As in our preceding discussion of the diverging interests of individuals and the groups to which they belong, one cannot improve the perception of one without hurting the other.

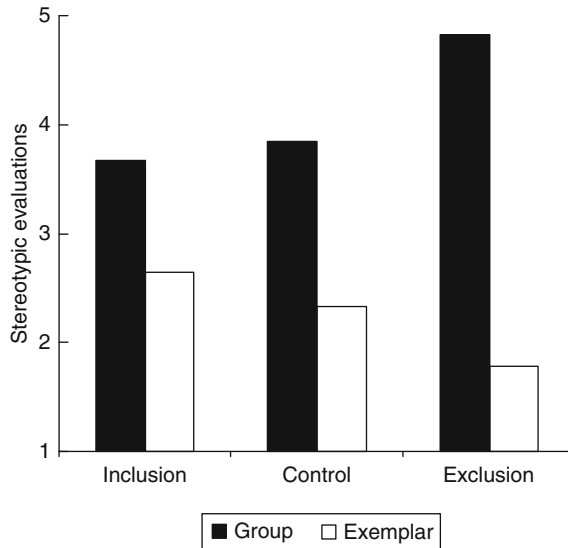


Figure 6.7 Stereotypic evaluations as a function of target and categorization of the stereotype-inconsistent exemplar. Higher scores reflect more stereotypic evaluations. Data from [Bless et al. \(2001\)](#).

Similarity and dissimilarity testing As [Mussweiler and colleagues \(2003, 2007; Mussweiler & Strack, 1999\)](#) emphasized, perceived similarity is not only a function of the actual attributes of two entities, but also a function of what the perceiver is looking for. Consistent with the assumptions of confirmatory information search, perceivers who test a hypothesis of similarity are likely to search for similar attributes, whereas perceivers who test a hypothesis of dissimilarity are likely to search for dissimilar attributes. As in the preceding cases, similarities give rise to assimilation, whereas dissimilarities give rise to contrast. For example, [Mussweiler et al. \(2004\)](#) observed assimilation effects on self-evaluations when participants searched for similarities between the self and a comparison other, but contrast effects when they searched for dissimilarities. From the perspective of the IEM, these differential search foci are likely to simultaneously affect the representations formed of the target *and* of the standard, which gives these search processes particular power. By definition, similarities are features that are shared by the self and the other and can hence enter into both representations; their inclusion in the representation of the self results in assimilation, while their simultaneous inclusion in the representation of the other results in a standard that is similar to the self, thus also attenuating any contrast that may otherwise be observed. Conversely, dissimilarities imply that some feature X applies to the self, whereas some feature non-X applies to the other.

Including feature X in the representation of the self again elicits assimilation toward X; simultaneously including feature non-X in the representation of the other results in a standard that is dissimilar to the self with regard to X, further enhancing the judgment that the self is high on X. Accordingly, similarity and dissimilarity searches are particularly powerful instantiations of the mental construal processes underlying assimilation and contrast effects in general.

3.2.4. Category heterogeneity, mutability, and category boundaries

Heterogeneity and mutability Categories differ in heterogeneity. People assume, for example, that members of a natural category (e.g., birds) are more similar to one another than members of an artifactual composite category (e.g., things in a house). The perceived internal homogeneity or heterogeneity of a category, in turn, constrains the range of information that can be included in the category representation (e.g., [Hilton & von Hippel, 1990](#); [Lambert & Wyer, 1990](#); [Lambert et al., 2004](#)). All else equal, a given piece of information is therefore more likely to result in assimilation effects in judgments of heterogeneous target categories (reflecting inclusion), but in contrast effects in judgments of homogeneous target categories (reflecting exclusion). Similarly, target categories that are perceived as highly mutable allow for the inclusion of a more varied set of information than less mutable target categories, giving rise to assimilation effects in the former and contrast effects in the latter case (e.g., [Stapel & Koomen, 2001](#)).

Boundaries Most category boundaries are malleable and their perception is itself subject to contextual influences, as the example of temporal categories may illustrate. [Strack et al. \(1985\)](#) asked participants to recall a positive or negative life event that happened either recently or more than 5 years ago. Recent events resulted in an assimilation effect on later judgments of current life satisfaction, whereas distant events resulted in a contrast effect. This reflects that recent events could be included in the representation of “my life now,” whereas distant events could not, and hence served as a standard of comparison. In follow-up experiments (reported in [Schwarz & Strack, 1999](#)), freshmen were asked during their first month at college to recall a positive or negative life event that happened “during the last two years.” Replicating the earlier findings, these recent events resulted in assimilation effects on current life satisfaction. Other freshmen were given the same task, except for a small addition to the instructions: They were asked to recall a positive or negative event that happened “during the last two years, that is, before you came to the university.” This addition drew attention to an otherwise ignored category boundary and invited them to segment the stream of life into their high-school time and college time. Under this condition, a contrast effect emerged, with positive memories of one’s high-school time resulting in negative evaluations of one’s current

life. Findings of this type illustrate the malleability of construal processes and highlight how minor variations in question wording can elicit opposite downstream effects.

In some cases, category boundaries are marked by perfectly superficial features, like the similarity or dissimilarity of the names given to products of the same brand. In one study (Wänke et al., 1998), participants learned about the cars produced by an Italian manufacturer before evaluating the brand's newest model, a car named Milano. When the brand's other models were also named for Italian cities (with names like Firenze or Siena), the new Milano was evaluated in line with the brand's image, reflecting an assimilation effect. Conversely, when the manufacturer's other cars were named for geometrical figures (with names like Circle or Triangle), the new Milano was contrasted to the brand's image. Thus, name continuation or discontinuation was sufficient to influence the categorization of the new model and hence the emergence of assimilation or contrast effects.

In sum, this selective review illustrates a core assumption of the IEM: *any* variable that can influence the categorization of information can also determine the direction of context effects.

3.2.5. Making sense of the target

Since the initial demonstration of trait-priming effects (Higgins et al., 1977; Srull & Wyer, 1979), social psychologists have extensively studied the impact of concept accessibility on the interpretation of ambiguous information, usually relying on a limited set of trait concepts and minor variations of the ambiguous target descriptions used in the original studies. This work showed that ambiguous information is interpreted in terms of the applicable concept that is most accessible at the time of encoding; for example, Donald's conviction that he will excel at everything he does will be perceived as evidence of admirable "confidence" or annoying "conceitedness," depending on which of these two applicable trait concepts is more accessible (Higgins et al., 1977). Such effects are not observed when the accessible trait concept is not applicable to the behavior; when the behavior is not ambiguous; or when the perceiver is aware of a possible influence of the priming episode, as discussed earlier, in the context of the IEM's "aboutness" filter. For comprehensive reviews of this literature, see DeCoster and Claypool (2004), Förster and Liberman (2007), Higgins (1996), and Wyer and Srull (1989). Not surprisingly, priming effects on the interpretation of ambiguous behaviors result in assimilation effects on the evaluation of the person to which these behaviors are attributed—after all, the behavior one interprets is indeed the behavior of the target and hence included in the target representation; thus, Donald is liked more when perceived as confident rather than conceited.

Trait concepts can be rendered accessible through direct exposure to the trait term (e.g., Higgins et al., 1977), exposure to behaviors that exemplify

the trait (e.g., [Srull & Wyer, 1979](#)), or exposure to persons that exemplify the trait (e.g., [Herr, 1986](#)). The latter case is of particular interest because exposure to an exemplar can elicit assimilation as well as contrast effects, depending on how perceivers think about the exemplar. For example, [Philippot et al. \(1991\)](#) presented participants with a letter matrix that contained the names of either well-known hostile (e.g., Hitler) or well-known kind (e.g., Mother Theresa) individuals. Some participants were instructed to identify the names of “hostile” (or “friendly”) people in this matrix. When these participants subsequently read an ambiguous description of Donald (taken from [Srull & Wyer, 1979](#)), they perceived Donald as more hostile when their letter matrix contained the names of hostile rather than friendly exemplars; this replicates the familiar assimilation effect of trait priming. However, other participants were merely asked to identify “hidden” names or the names of “famous” individuals. These participants perceived Donald as less hostile when their letter matrix contained the names of hostile rather than friendly exemplars; this replicates the lateral-level contrast effects discussed earlier—Donald is not Hitler and compared to Hitler, he is not very hostile. In short, exposure to exemplars fosters assimilation effects when the exemplar brings the associated trait concept to mind, provided that the concept is applicable to subsequent ambiguous information. However, exemplars are not necessarily thought about in terms of their associated traits; when looking for “hidden names” or “famous people,” one may miss that Hitler is also “hostile.” But when later asked to rate Donald’s hostility, the previously primed exemplar Hitler may come to mind, providing an extreme standard that elicits a contrast effect.

Much as exposure to exemplars can sometimes render traits accessible, exposure to traits can sometimes bring exemplars to mind. Accordingly, [Mussweiler and Damisch \(2008\)](#) observed that exemplars that represented the traits “aggressive” or “intelligent” were recognized faster when the respective trait was primed than when it was not. Once exemplars come to mind, however, they may further influence later judgments by eliciting contrast effects ([Mussweiler & Damisch, 2008](#)). Related work by Stapel and colleagues (e.g., [Stapel & Koomen, 1998a,b](#); [Stapel et al., 1996, 1997](#)) further illuminated the complexities of trait and exemplar priming. Consistent with the knowledge-accessibility literature ([Higgins, 1996](#)), [Stapel’s \(2007\)](#) interpretation-comparison model of assimilation and contrast effects assumes that “accessible knowledge may be used as an interpretation frame that gives meaning to and makes sense of stimuli—a ‘pull’ toward assimilation” (p. 150). In contrast to traits, exemplars are assumed to serve as standards of comparison when other exemplars are evaluated, consistent with the lateral category structure that characterizes this constellation. These effects are particularly pronounced when other variables, like the exemplar’s distinctiveness, further discourage its inclusion in the representation formed

of other targets (Stapel, 2007; Stapel & Winkielman, 1998), consistent with the assumptions discussed earlier. Given that interpretation-based influences are only expected when “there is something to be *interpreted*, that is, when the target stimulus is *ambiguous*” (Stapel, 2007, p. 155), much of this work has followed the tradition of the Donald paradigm (Higgins et al., 1977; Srull & Wyer, 1979), limiting the exploration of interpretation-based assimilation effects to a special case of person perception. Future research may fruitfully broaden the scope.

3.3. Conversational relevance: Is this part of the common ground?

The IEM’s final filter acknowledges that people do much of their thinking in a social context, which involves communication with others. This is almost always true for social judgment research, which typically involves some question–answer sequence designed to provide insight into participants’ thoughts. Thinking in a social context involves more than the inside-the-head processes that have been the focus of most social cognition research (for discussions, see Clark & Schober, 1992; Hilton, 1995; Schwarz, 1994, 1996). To ensure mutual understanding, communicators need to attend to the recipient’s likely knowledge and the common ground established in the conversation when they interpret the other’s utterances and design their own contributions (Clark, 1985; Grice, 1975; Sperber & Wilson, 1986). These conversational processes can influence the representation formed of the target and standard, and hence the emergence of assimilation and contrast effects. Conversational influences have found limited attention in judgment research but are likely to contribute to some familiar phenomena, as discussed below.

In addition, people may hesitate to communicate judgments that may seem socially undesirable in the given context (for a review, see DeMaio, 1984). Such social desirability effects presumably reflect that a privately held judgment is “edited” before it is publicly communicated (Strack & Martin, 1987); hence, they are beyond the scope of the present discussion. We note, however, that the “edited” public version of one’s private judgment may become part of the representation of the target, influencing later judgments downstream (for a review, see McCann & Higgins, 1992).

3.3.1. Common ground and the construction of targets: Avoiding conversational redundancy

The previously discussed representativeness filter pertains to whether a given piece of information is descriptive of the target and should hence be included in its representation. Even when this question is answered affirmatively, the information may nevertheless not be used in forming a target representation when its use would violate conversational norms.

One relevant conversational norm holds that speakers should respect the common ground by providing information that the recipient needs and not reiterating information that the recipient already has (a derivative of Grice's, 1975 maxim of quantity; for reviews, see Schwarz, 1994, 1996).

A previously discussed question-order experiment illustrates this point. Recall that life satisfaction and marital satisfaction correlated $r = 0.32$ when the life-satisfaction question preceded the marital satisfaction question; however, this correlation increased to $r = 0.67$ when the question order was reversed (Schwarz et al., 1991; see also Haddock & Carrick, 1999; Strack et al., 1988). As discussed earlier, this assimilation effect reflects that the preceding marital-satisfaction question brought marriage-related information to mind, which respondents used in forming a representation of their lives in general (a superordinate target). In another condition of the same study, both questions were explicitly placed in the same conversational context, thus evoking the norm of nonredundancy. This was accomplished by a joint lead-in to both questions: "Now we would like to learn about two areas of life that may be important for people's overall well-being: happiness with marriage and happiness with life in general." Subsequently, both satisfaction questions were asked in the marriage-life order. With this lead-in, the correlation dropped from the previously obtained $r = 0.67$ to $r = 0.18$, indicating that respondents deliberately disregarded information that they had already provided in response to the marital-satisfaction question when making a subsequent general life-satisfaction judgment, despite its high accessibility in memory. Presumably, they interpreted the general question as if it referred to aspects of their life that they had not yet reported on. Supporting this interpretation, a condition in which the general question was reworded in this way ("Aside from your marriage, which you have already told us about, how satisfied are you with your life in general?") resulted in a nearly identical correlation of $r = 0.20$.

Paralleling these differences in correlation, respondents who were induced to disregard their marriage in evaluating their life as a whole reported higher life satisfaction when they were unhappily married, and lower life satisfaction when they were happily married, than respondents who were not induced to exclude this information. Thus, contrast effects were obtained when conversational norms elicited the exclusion of marital information from the representation formed of one's life, despite its substantive relevance to the judgment and a categorical relationship between context and target that usually elicits assimilation effects.

On theoretical grounds, we can assume that these effects are moderated by individuals' attention to the conversational context. If so, numerous variables that are unrelated to the topic of judgment, but influence attention to the ongoing conversation, may moderate the emergence of assimilation and contrast effects. Empirically, this is the case. For example, individuals in interdependent cultures are more sensitive to conversational variables

than individuals in independent cultures (for reviews, see Oyserman & Lee, 2008a; Oyserman et al., 2002). Accordingly, a conceptual replication of the above question-order experiment found that Chinese participants spontaneously showed contrast effects, even in the absence of a joint lead-in; German participants, on the other hand, showed assimilation effects, replicating the earlier findings (Haberstroh et al., 2002). Moreover, experimental inductions of independence or interdependence produced parallel effects (Haberstroh et al., 2002). Any other variable that affects sensitivity to conversational context, like high versus low power (Gruenfeld et al., 2003), should show a parallel influence, providing a promising avenue for future research into social determinants of information use.

3.3.2. Common ground and the construction of standards: Compared to what?

Conversational processes also influence the construal of standards. As numerous jokes of the “compared to what?” type illustrate, evaluative judgments can only be meaningfully interpreted when we understand the speaker’s frame of reference. We consider two implications of this observation.

Is this part of what we are talking about? Numerous judgment models in the psychophysics tradition (e.g., Helson, 1964; Ostrom & Upshaw, 1968; Parducci, 1965; Volkmann, 1951; Wedell, 1996) emphasize that targets are evaluated relative to a standard set by the distribution of contextual stimuli. Some models assume that the standard influences the actual “private” perception of the stimulus (e.g., Helson, 1964), whereas others assume that the standard primarily influences the use of the response scale (e.g., Ostrom & Upshaw, 1968; Volkmann, 1951); yet, other models allow for both influences (e.g., Parducci, 1995). From the perspective of the IEM, it is worth noting that experimental tests of these models usually involve the evaluation of lateral stimuli, for which the IEM predicts the emergence of contrast effects. Consistent with this prediction, contrast effects are the common finding in this literature (for an excellent review, see Wedell et al., 2007). What is often overlooked, however, is the extent to which conversational processes influence the construal of standards in such experiments.

A classic study by Brown (1953) illustrates this point. Like numerous others, Brown observed that the perception of weights was contrasted against a heavy context weight. However, this contrast effect was only obtained when participants were handed each weight and asked to make a judgment. When the experimenter merely asked participants to move a tray of comparable weight “out of the way,” no contrast effect emerged on subsequent weight judgments. Presumably, the tray was perceived as extraneous to the task and hence not included in the representation of the standard used for this task (see also Zellner et al., 2003). Note, however, that it remains unclear whether the tray failed to affect how heavy the target

stimulus “felt” or whether participants merely corrected for the tray’s influence when they reported their judgment, given that the tray was not part of the stimulus set deemed relevant to the task. Although the distinction is important, experimental procedures that rely on explicit reports are ill equipped to answer it.

In a related vein, Schwarz et al. (1990) observed that contrast only emerged when the contextual exemplars were linked to the relevant dimension of judgment. They asked participants to judge how “typically German” a number of beverages are (wine, coffee, and milk) and presented these beverages in the context of either highly typical (beer) or a highly atypical (vodka) context exemplar. Contrast effects emerged when participants were asked to estimate how frequently Germans drink beer or vodka. Note that the frequency of consumption is relevant to the national typicality of a beverage, thus linking the context question to the typicality dimension. However, contrast effects were not observed, when participants estimated the caloric content of beer or vodka. Thus, merely rendering beer or vodka accessible was insufficient to prompt their use in the construction of a standard.

In sum, potentially applicable accessible information may not be used in constructing a standard when it is perceived as falling outside the shared understanding of what is relevant to a given task. Although this, by itself, is not surprising, it has important implications for the use of contextual information when the target and context are assigned to different categories.

Category-specific standards The statement “Bobby is tall” conveys different height information when Bobby is a preschooler than when Bobby is a basketball player. By the same token, previous exposure to an adult basketball player is unlikely to affect judgments of the tallness of a preschooler (much like Brown’s tray did not affect judgments of his weights). In both cases, the target’s category membership specifies an applicable frame of reference, which informs representations of the target and constrains the range of context information that is appropriate in forming a standard. Knowledge of the category usually entails knowledge of the applicable frame of reference and cooperative communicators take shared category knowledge into account; this is what allows them to describe a 4-foot preschooler as “tall,” and a 6-foot basketball player as “short,” without being accused of misrepresenting the truth.

The shifting-standard model proposed by Biernat, Manis, and their colleagues highlights the implications of these processes (for reviews, see Biernat, 2003, 2005; Biernat & Manis, 2007; Biernat et al., 1991). It assumes that target judgments are made relative to category-specific standards and emphasizes that different category assignments are associated with shifts in the applicable standard. The influence of category-specific standards is pronounced when judgments are made along subjectively defined dimensions like “tallness,” where the scale is anchored by relevant exemplars.

Shifting-standard effects are not obtained when scales are defined in objective units (like centimeters or inches), which carry their own category-independent frame of reference. We conjecture that shifting-standard effects are attenuated or eliminated when people are aware that the relevant category knowledge is not part of the common ground, for example, when they speak with a foreigner, who may not share the stereotype, or a person from a different occupation, who may not share category expertise. This possibility, and its potential downstream impact on the target and standard representations formed in a conversational context, provides a promising avenue for future research.

3.3.3. Inferences from research procedures

Finally, it is worth noting that many apparently “formal” aspects of a study’s procedure can convey information that influences participants’ information use. Consistent with the Gricean maxims that govern the conduct of conversation in daily life, participants usually assume that all “contributions” of the researcher to the ongoing conversation are relevant to their task, unless marked otherwise. The researcher’s contributions include many features of questionnaire layout, question sequencing, or task administration that are merely selected for convenience or for methodological reasons, unrelated to their potential meaning in context (for reviews, see [Bless et al., 1993](#); [Schwarz, 1994, 1996](#)). Nevertheless, participants draw on these features to determine the meaning of the researcher’s questions and the nature of their task, with downstream effects on their information use and the emergence of assimilation and contrast effects. Two examples may illustrate this point.

Graphical layout As discussed earlier, explicit lead-ins to related questions can evoke the norm of conversational redundancy ([Schwarz et al., 1991](#)); in the same marriage–life question order, the observed correlation of both questions dropped from $r = 0.67$ without a joint lead-in to $r = 0.18$ with a joint lead-in. Follow-up studies ([Schwarz, 1996](#)) showed that the graphical layout of self-administered questionnaires can have the same influence. When the marital-satisfaction and life-satisfaction questions were presented in separate boxes, with a black frame drawn around each question, they correlated $r = 0.59$; when both questions were presented in a joint box, with one frame drawn around both questions, the correlation dropped to $r = 0.24$. Much like the joint lead-in used in the initial studies, the latter layout emphasized the relatedness of both questions, prompting respondents to avoid redundancy in their answers. Unfortunately, few researchers are aware that such presumably “formal” characteristics of their questionnaires can influence participants’ question interpretation and information use, even to the extent of turning assimilation effects into contrast effects.

Presentation format Similarly, [Abele and Petzold \(1998\)](#) observed that the order in which stimuli were presented influenced participants’ inferences about the comparisons of interest. In their study, participants were

exposed to a set of stimulus persons allegedly drawn from two occupations and made judgments of each individual presented. Depending on conditions, all persons from the same occupation were presented together (blockwise presentation) or persons from both occupations were presented in a random order (mixed presentation). Abele and Petzold assumed that a mixed presentation format conveys that differences *between* the occupations are of interest; if so, participants should take each person's occupation into account, resulting in an assimilation effect on the perception of the respective individual. Conversely, a blockwise presentation format may convey that differences *within* the occupation are of interest; if so, taking the person's occupation into account would not be particularly informative—after all, this feature is shared by all members of the occupation. Nevertheless, the occupation is highly accessible and may be considered in constructing a standard, resulting in contrast effects on the perception of the individual. Their results were consistent with these predictions.

Similarly, Wedell et al. (1987; see also Martin & Seta, 1983) compared the influence of a sequential or simultaneous presentation format on the evaluation of individuals' facial attractiveness. Replicating numerous earlier studies, the same face was rated more favorably when it followed a less attractive face in a sequential format, reflecting a contrast effect. When the faces were presented in pairs, however, the same face was rated less favorably when presented simultaneously with a less attractive face, reflecting an assimilation effect. The authors attributed this assimilation effect “to a failure to separate the individual stimulus from other stimuli that are simultaneously present” (Wedell et al., 1987, p. 231). This failure may reflect that the simultaneous presentation format conveyed that the two stimuli are to be considered together, thus inviting their shared categorization in an *ad hoc* category. As Abele and Petzold's (1998) findings suggest, the interest inferred from a simultaneous presentation format may have shifted again, had the study included an additional categorization variable, crossed with the presentation format.

To date, research into the emergence of context effects in social judgment has paid little attention to the role of conversational processes. The limited available evidence suggests, however, that their systematic investigation will advance our understanding of human judgment in a social context as well as our sensitivity to what our research procedures convey (for reviews, see Hilton, 1995; Schwarz, 1994, 1996).

3.4. Coda

Before leaving the discussion of the IEM's assumptions about information use, some caveats are called for that pertain (a) to the proposed filters and (b) to the difference between external context stimuli and their internal representation. *First*, to impose order on a large number of variables that can affect information use, the IEM organizes them with regard to three broad

filter questions: Does this information come to mind for the wrong reason? Is it representative of the target? Is its use appropriate in the current context? As readers will have noted, many variables can bear on several of these filter questions under different conditions and the operation of a given variable cannot always be confidently traced to a single filter. Moreover, although the sequence in which we presented these filters makes for a parsimonious decision tree, the model entails no claim that people will work through these issues in exactly this sequence. Finally, future research may uncover variables that are best conceptualized by introducing additional filters. In either case, however, the model holds that *any* variable that elicits the inclusion of contextual information in the representation of the target results in assimilation effects, whereas *any* variable that elicits the exclusion of contextual information results in contrast effects.

Second, our discussion of mental construal processes reiterates a core theme of social psychology: To understand people's response to a situation, their subjective construal of the situation is more important than the situation's objective features. This insight is often neglected in the discussion of context effects, where the attributes of what is presented to participants receive more attention than participants' own construal and use of the information. When predicting whether a given context stimulus exerts an assimilative or contrastive influence, we therefore need to determine which information is brought to mind *internally* and how this information is *used*.



4. PROCESSING VARIABLES: COGNITIVE CAPACITY, MOTIVATION, AND PROCESSING STYLE

The specific processes reviewed earlier are likely to be moderated by other variables known to influence information processing in general. This section addresses some of the more likely candidates. Our selective review highlights the role of perceivers' processing capacity and motivation and differences in processing style.

4.1. Processing capacity and motivation

As numerous studies in diverse research domains illustrate, how much attention and effort people devote to a judgment task can profoundly affect the outcome (for reviews, see [Chaiken & Trope, 1999](#); [Eagly & Chaiken, 1993](#); [Fiske & Taylor, 2008](#)). In general, systematic processing increases with the perceiver's motivation and the available cognitive capacity. This can affect the processes central to the IEM in two ways. First, the IEM's filter operations require an assessment of accessible information in terms of the filter questions to determine the information's proper use. This requires

processing resources. How resource intensive the filter processes are is likely to depend on the specific filter and the variable to which it is applied, as discussed below. Second, the subsequent use of information in constructing representations of the target and standard also requires resources. Models of associative processing suggest that the inclusion of accessible information in the representation of the target may be less resource sensitive than its exclusion (for a discussion, see [Strack & Deutsch, 2004](#)), although the available evidence may often reflect differences at the filter application stage rather than the mental construal stage. Future research will need to separate these possibilities. Both of these aspects converge on the prediction that, *ceteris paribus*, the likelihood of assimilation effects increases and the likelihood of contrast effects decreases, with decreasing processing motivation and capacity. The available evidence is compatible with this prediction.

As discussed, blatant priming procedures ([Martin, 1986](#)) fail the first filter (“Why does it come to mind?”) and elicit contrast effects because participants become aware of a possible undue influence. Such contrast effects are not observed when participants’ processing capacity is impaired by a secondary task ([Martin et al., 1990](#); see also [Meyers-Levy & Tybout, 1997](#); [Moskowitz & Skurnik, 1999](#)). This observation may reflect interference with the filter application or with the correction process. In general, the capacity needed to recognize a potential undue influence should decrease with the salience of the influence.

Turning to the second filter (“Does it describe the target?”), the available evidence suggests that many, but not all, assessments of the representativeness of context information are resource intensive. For example, assessing the typicality of an exemplar for its superordinate category requires resources and atypical features may be missed when the perceiver is distracted or insufficiently motivated. Hence, moderately atypical exemplars are more likely to be included in the representation of their group when processing resources are low rather than high (e.g., [Yzerbyt et al., 1999](#)). By the same token, such targets are more likely to be represented in terms of their category membership rather than their individuating attributes when processing motivation or capacity is low, a standard finding of stereotyping research (e.g., [Bodenhausen, 1990](#); [Neuberg & Fiske, 1987](#); for reviews, see [Fiske et al., 1999](#); [Macrae & Bodenhausen, 2000](#)). Resource constraints should be less relevant when the exemplar is highly atypical or when an atypical feature is highly salient for other reasons. Conversely, lateral categories are mutually exclusive and few resources may be needed to recognize this. Hence, contrast effects have been observed even when the primed exemplar is presented subliminally and the judgment must be made quickly (e.g., [Stapel & Blanton, 2004](#); [Winkielman et al., 1994](#)). The numerous variables relevant to the representativeness filter vary widely in the likelihood that nonrepresentativeness will be noted in the absence of detailed processing, suggesting that the effects of processing constraints may be

highly dependent on the variable at hand. A systematic exploration of these complexities provides a promising avenue for future research.

The third filter (“Is this information part of the common ground?”) pertains to the conversational context of information use. Monitoring the common ground and recognizing potential violations of conversational norms requires attention to the ongoing conversation. Accordingly, these processes are likely to be impaired by low processing capacity or motivation. Compatible with this conjecture, contrast effects that reflect the avoidance of conversational redundancy are more likely under conditions that motivate high attention to the common ground, like chronic or temporary interdependence (Haberstroh et al., 2002). Similarly, pragmatic inferences from research procedures, like the presentation format (e.g., Abele & Petzold, 1998), should be resource sensitive. To date, direct evidence bearing on these issues is not available.

In addition, processing motivation and capacity are likely to influence the size of context effects, consistent with the set-size assumption of the IEM. *Ceteris paribus*, bringing more information to mind requires more effort and the amount of accessible information used in constructing mental representations is a key determinant of the size of assimilation and contrast effects (see Bless et al., 2003 for a more detailed discussion).

As a result, numerous variables that are themselves unrelated to the target may influence the emergence and size of assimilation and contrast effects through their influence on processing motivation and capacity. These variables include individual difference variables, like need for cognition (Cacioppo & Petty, 1982), need for closure (Webster & Kruglanski, 1994), or need for validity (Kruglanski & Webster, 1996), as well as situational influences, like time of day (circadian rhythms; Bodenhausen, 1990), time pressure, distraction, secondary tasks, and the relevance of the topic (Petty & Cacioppo, 1986). The indirect impact of such variables, mediated by their effect on processing motivation and capacity, should be pronounced when noticing a filter violation requires detailed attention to the information at hand, but negligible when potential violations are easy to detect.

4.2. Differences in processing style

In addition to motivation and capacity, numerous other variables can influence the extent of detail-oriented processing. In general, any variable that fosters the formation of more fine-grained representations at a lower level of abstraction should increase the likelihood of contrast effects; conversely, any variable that fosters the formation of more abstract and less differentiated representations should increase the likelihood of assimilation effects. We first review research that directly isolated these variables by inducing a local versus global processing style and subsequently turn to variables known to have a similar influence on processing style, including

affective states, environmental problem signals, and cultural and situational in differences in individualism/collectivism.

4.2.1. Local versus global processing

A given stimulus can be represented at different levels of abstraction; for example, a dog may be represented as an “animal,” a “dog,” or a specific exemplar (“Ben’s dog Dukesy”). As noted in our discussion of category structure and boundaries, superordinate abstract categories allow for the inclusion of a broader range of information than subordinate, more concrete categories. Hence, a reasoning style that fosters the formation of more abstract representations should increase the likelihood of assimilation effects, whereas a reasoning style that fosters the formation of more concrete, lower level representations should increase the likelihood of contrast effects. Empirically, this is the case. In a particularly compelling demonstration, Förster et al. (2008) induced either a global processing style (associated with forming abstract representations) or a local processing style (associated with forming concrete representations) through preceding tasks, thus manipulating processing style independently of the attributes of the target and context information. As expected, subsequent evaluation tasks showed assimilation effects when a global processing style was induced, but contrast effects when a local processing style was induced. For example, participants were presented with a map of their home town and were asked to look at it as a whole (global processing) or to look at the details (local processing). Subsequently, participants worked on a person perception task that included a trait-priming manipulation and an ambiguous person description (adopted from Srull & Wyer, 1979). The evaluation of the target person reflected assimilation effects when a global processing style was induced, but contrast effects when a local processing style was induced.

Numerous other variables, from psychological distance (Liberman & Trope, 1998; Trope et al., 2007) to regulatory focus (Förster & Higgins, 2005) and hemispheric activation (Förster et al., 2008), can similarly influence the level of abstraction at which a stimulus is represented. As reviewed next, one of the most powerful of these variables is whether the person perceives the current situation as benign or problematic.

4.2.2. Cognitive tuning: The influence of moods and environmental problem signals

As James (1890) noted, human cognition stands in the service of action. We may therefore assume that individuals’ thought processes are tuned to meet the requirements of their goal pursuits in a given context; numerous findings are compatible with this assumption (for reviews, see Schwarz, 2002; Smith & Semin, 2004). When things go wrong, attention shifts to a lower level of abstraction (Vallacher & Wegner, 1986) and information is processed more systematically and with more attention to the details at hand;

when things go smoothly, people are more likely to rely on general knowledge structures that served them well in the past (Bless & Schwarz, 1999; Schwarz, 1990, 2002). Any variable that can signal a “benign” or “problematic” situation can elicit these differences in processing style; these variables include the person’s own apparent affective response to the situation, metacognitive experiences and bodily sensations, as well as environmental cues (for reviews, see Schwarz, 2002; Schwarz & Clore, 2007). The resulting differences in processing style have been observed with a broad range of tasks. For example, compared to happy individuals, sad individuals represent behaviors at a lower level of abstractness (e.g., Beukeboom & Semin, 2006) and are more likely to focus on local rather than global features (e.g., Gasper & Clore, 2002). Moreover, sad individuals are more likely to engage in systematic message elaboration in persuasion situations (e.g., Bless et al., 1990), to elaborate on individuating information in impression formation tasks (e.g., Bless et al., 1992) and to attend to the specifics of a behavioral description, whereas happy individuals are more likely to rely on heuristic cues (e.g., Worth & Mackie, 1987), category-based stereotypes (e.g., Bless et al., 1996b; Bodenhausen et al., 1994), and general scripts (e.g., Bless et al., 1996a). Other “problem” cues, like low processing fluency (e.g., Song & Schwarz, 2008) or even the color of the paper on which information is presented (e.g., Soldat et al., 1997), have similar effects (for a review, see Schwarz & Clore, 2007).

In combination, these findings indicate that “problematic” situations are associated with more extensive, effortful, and detail-oriented processing than “benign” situations. Both, more extensive processing and the construction of more concrete and differentiated mental representations, should foster the emergence of contrast effects. Although this prediction is consistent with the findings reviewed in the previous two sections, direct experimental tests of the role of cognitive tuning variables in the emergence of assimilation and contrast effects are sparse. This area is ripe for investigation.

4.3. Individualistic versus collectivistic mind sets

A growing body of research in cultural psychology shows that chronic differences in individualism/collectivism (independence/interdependence) are associated with different processing styles (for a review, see Oyserman et al., 2002), which can also be observed when these different interpersonal orientations are temporarily induced through priming procedures (for a review, see Oyserman & Lee, 2007, 2008a). Consistent with the logic of situated cognition, different cultural orientations require different cognitive procedures for their efficient execution (for a theoretical discussion, see Oyserman & Lee, 2008b; Oyserman & Sorensen, 2009). The accumulating evidence indicates that an individualist orientation is associated with procedures that facilitate focus on an isolated stimulus and its unique attributes,

pulling the stimulus apart from the field. In contrast, a collectivist orientation is associated with procedures that facilitate the identification of relations, emphasizing the embeddedness of a stimulus in its field. These differences have been observed on a wide variety of social (e.g., [Haberstroh et al., 2002](#)) and nonsocial tasks, including performance on memory tasks (e.g., [Kühnen & Oyserman, 2002](#); [Oyserman et al., 2009](#)), Navon tasks (e.g., [Kühnen & Oyserman, 2002](#); [Oyserman et al., 2009](#)), and Stroop tests (e.g., [Oyserman et al., 2009](#)).

We may therefore expect that a collectivist orientation, associated with attention to the relation between a stimulus and its context, fosters the emergence of assimilation effects, whereas an individualist orientation, associated with a focus on the distinctness of the stimulus, fosters the emergence of contrast effects. The limited available evidence is compatible with these predictions (for reviews, see [Oyserman & Lee, 2008a,b](#); [Oyserman & Sorensen, 2009](#)). Similarly, [Ahluwalia \(2008\)](#) observed that the perceived fit between a brand (superordinate category) and a brand extension (subordinate exemplar) was higher for participants with a collectivistic (interdependent) rather than individualistic (independent) orientation, resulting in more pronounced assimilation effects. Paralleling this observation, East Asians have been found to be more likely to assimilate brand extensions to the brand than Westerners ([Monga & John, 2007](#)).

4.4. Other mindsets

As the above discussion illustrates, preceding tasks and other contextual variables can influence which of several applicable cognitive procedures people apply to subsequent context and target information, consistent with the logic of procedural priming (for an overview, see [Smith, 1994](#)). Although our discussion focused on variables that are likely to affect the abstractness and inclusiveness of the resulting target representations, other lines of research showed similar carry-over effects for other procedures. For example, preceding tasks can induce an interpretation or a comparison mindset that influences whether later context information is used in interpreting information about the target, giving rise to assimilation effects, or in constructing a standard, giving rise to contrast effects (for a review, see [Stapel, 2007](#)). In a particularly compelling demonstration, [Stapel and Koomen \(2001\)](#) showed that priming participants with words like “interpretation” increased the likelihood that an ambiguous target was assimilated to a context exemplar, whereas priming participants with words like “comparison” increased the likelihood that an ambiguous target was contrasted to the exemplar. This and related experiments show that mindset manipulations can override “the ‘classic’ assimilative trait priming and contrastive exemplar priming effects” ([Stapel, 2007](#), p. 155). Similarly, [Mussweiler](#) and his colleagues observed that preceding tasks can induce a focus on

similarities of dissimilarities that carries over to subsequent tasks (for a review, see [Mussweiler, 2007](#)). For example, participants who were asked to detect similarities between two pictures subsequently searched for similarities between a target and a standard, resulting in assimilation effects; conversely, participants who focused on dissimilarities between the pictures subsequently searched for dissimilarities between a target and a standard, resulting in contrast effects ([Mussweiler, 2001](#)).

In sum, findings of this type highlight that the construction of targets and standards is not only a function of the attributes of the target and context information itself, but also of the procedures that participants bring to the task. When several procedures are applicable, the one most likely to be used is the one that is most accessible at the time, for example, because it has been used for a preceding task. Accordingly, extraneous variables can influence the mental representations formed in ways that cannot be predicted on the basis of either the target or the context information alone.



5. “ASSIMILATION OR CONTRAST” VERSUS “ASSIMILATION AND CONTRAST”

Much of our discussion has focused on the conditions under which contextual information elicits *either* assimilation *or* contrast effects, implying that assimilation and contrast effects are mutually exclusive. In contrast, others have suggested that assimilation and contrast effects can occur simultaneously and that the observed change in judgment is the net effect of both opposing influences (cf. [Abele & Gendolla, 1999](#); [Petzold, 1992](#)). Both assertions are correct, but reflect different levels of analysis.

The IEM conceptualizes how accessible information is used in constructing representations of targets and standards. It holds that a given piece of information can be used in constructing either a representation of the target, resulting in an assimilation effect, or a representation of the standard, resulting in a contrast effect. Under this logic, the *same piece of information* cannot simultaneously result in assimilation and contrast effects on judgments of the *same target* along the *same dimension*. Hence, at the IEM's level of analysis, which focuses on features used in the respective mental representations, assimilation and contrast effects are mutually exclusive. However, any given target has numerous features and accessible context information can give rise to assimilation effects on the assessment of one feature, but contrast effects on the assessment of the other feature. A later overall evaluation of the target that includes both features would then reflect the net effect of both processes, which depends on their respective relative size.

For example, exposure to a scandal-ridden conservative politician may increase the accessibility of knowledge pertaining to the category

“conservatives,” which may guide the interpretation of ambiguous policy statements of another (target) politician. This would result in a perception of the target as more conservative than would otherwise be the case (assimilation). At the same time, the target may seem particularly trustworthy by comparison to his peer (contrast). The overall judgment of a voter who values trustworthiness but prefers liberal policies would then reflect the net effect of these assimilation and contrast effects on different attributes of the target. As another example, consider an academic whose colleague has won a Nobel prize. As discussed earlier, the Nobel laureate will improve the perception of his department (assimilation), but hurt the perception of his peers (contrast). By the same token, the self-evaluation of his office neighbor is likely to suffer from comparison with the “star,” but to benefit from the shared membership in a highly respected department. Although this self-evaluation would again reflect the assimilation effect initially elicited by the “star,” it is worth spelling out the full set of inferences: the contrast reflects (i) a direct comparison with the star (lateral category), whereas the assimilation effect reflects (ii) the inclusion of the star in the representation of the department (superordinate category) and (iii) the subsequent use of one’s own (subordinate category) membership in the department as an attribute in self-evaluation. One may be tempted to describe the first effect as a “direct” contrast effect and the latter as an “indirect” assimilation effect, but following the full sequence of implied inferences is usually more informative and draws attention to the many variables that can derail the assumed process in different ways.

In related work, [Wänke et al. \(2001\)](#) brought to mind a political star and assessed the consequences on the evaluation of other politicians. Not surprisingly, other politicians were evaluated less favorably (contrast), conceptually replicating the impact of the scandal-ridden politician on other politicians ([Bless et al., 2000](#); [Schwarz & Bless, 1992b](#)). These contrast effects were eliminated, however, when a preceding knowledge question drew attention to the shared party membership of target and star. This presumably occurred because the star had a positive impact on the (superordinate) party, which in turn influenced evaluations of the (subordinate) exemplar, thus countering the otherwise observed contrast between two (lateral) exemplars. Addressing this assumption directly in a second study, recipients were presented with a star in the form of a top-of-the-line product (a high-end toaster). As illustrated in [Fig. 6.8](#), the introduction of the star decreased the evaluation of another (average) model of the same brand (contrast) when the peripheral features of the two products differed (color, font, and design of the advertisement), rendering the shared category membership less salient. However, this contrast effect was eliminated when peripheral cues in the presentation emphasized that both products were produced by the same brand, highlighting the shared category membership. In this case, the brand image improved by the star was used for constructing

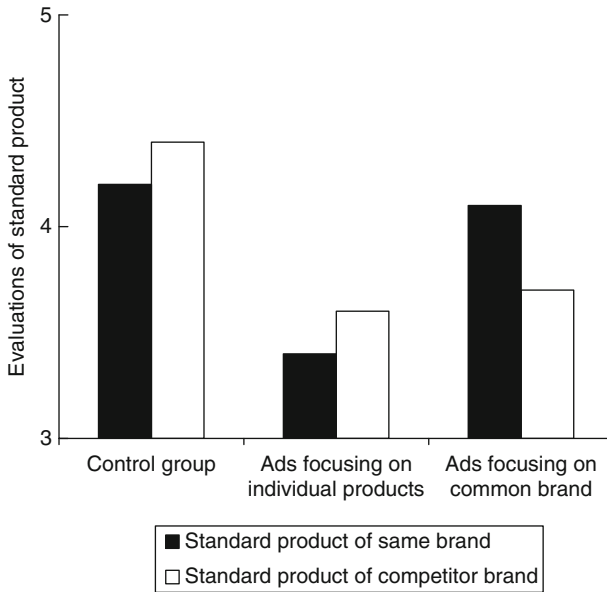


Figure 6.8 Evaluations of the standard product of the same or different brand as a function of advertising the top-of-the-line product. Higher scores reflect more positive evaluations. Data from Wänke et al. (2001).

the representation of the target. Moreover, in line with the IEM predictions, the star also exerted contrast effects on products of *another* brand. As theoretically predicted, the latter contrast effects were independent of the presentation format because products of different brands do not share a superordinate category membership.

Note also that the logic underlying this discussion is not limited to the opposing influence of assimilation and contrast effects. A happily married woman with a poor job who meets a divorced classmate with an outstanding career may subsequently be more satisfied with her family life, but less satisfied with her job. When asked for a judgment of general life satisfaction, her answer may again reflect the net effect of both effects, in this case the net effect of two contrast effects.

Finally, a methodological caveat is called for. Although several of our experiments are consistent with the rationale illustrated by these examples (e.g., Bless et al., 2000; Stapel & Schwarz, 1998; Wänke et al., 2001), the conclusions are based on mean differences between conditions involving many participants. This renders it difficult to determine whether the observed effects are indeed “within-person” effects, as our above examples assume (see Wänke et al., 2001 for correlational within-subjects analyses that avoid some of these methodological caveats). Alternatively, the mean

results may reflect “between-person” effects, with the judgments of some participants showing contrast in response to one feature and the judgments of other participants showing assimilation in response to another feature. These issues await systematic investigation. On theoretical grounds, we assume that a consideration and integration of multiple features requires relatively high-processing motivation and capacity and that most people, most of the time will terminate the judgment process before these more complex issues arise.

6. CONCLUDING REMARKS

This chapter presented the IEM as an integrative framework for conceptualizing the emergence, direction, size, and generalization of context effects in feature-based judgment. The model allows for a coherent conceptualization of the effects that have been identified by the major research traditions in this area, namely, psychophysics research that focused on the distribution of contextual stimuli (e.g., [Parducci, 1984](#); [Thibaut & Kelley, 1959](#); [Volkman, 1951](#)); attitude research that focused on categorization processes (e.g., [Herr et al., 1983](#); [Sherif & Hovland, 1961](#); [Tajfel, 1959](#)); and person perception research that focused on knowledge-accessibility effects (e.g., [Higgins et al., 1977](#); [Srull & Wyer, 1979](#)). Moreover, the IEM’s predictions are consistent with more recent models that illuminated specific component processes, like [Biernat and Manis’ \(2007\)](#) shifting-standard model, [Mussweiler’s \(2007\)](#) selective accessibility model, and [Stapel’s \(2007\)](#) interpretation–comparison model, which have advanced our understanding of assimilation and contrast effects.

When we first presented the IEM nearly two decades ago ([Schwarz & Bless, 1992a](#)), the evidence bearing on unique predictions of the model was rather limited. In the meantime, our empirical tests of the IEM have focused on its core assumption, namely, that assimilation and contrast effects are a function of information *use*. This assumption implies that the *same* context information can result in either assimilation or contrast effects, depending on whether it is used in constructing a representation of the target or a representation of the standard. Accordingly, our research attempted to manipulate information use, while holding the context information itself constant (e.g., [Bless et al., 2001](#); [Schwarz & Bless, 1992b](#); [Wänke et al., 1998, 2001](#)). Recent research that manipulated the procedures perceivers apply to a fixed set of context information (e.g., [Förster et al., 2008](#); [Stapel & Koomen, 2001](#)) further highlights the importance of information use. In combination, these lines of research provide converging evidence for the information–use logic, which also accommodates numerous target- and context-related variables that have been identified as determinants of

assimilation and contrast in earlier work. What renders research in this area complex are not the simple mental construal principles at the heart of assimilation and contrast effects, but the numerous variables that can influence how a given piece of information is used. Although future research will undoubtedly uncover many additional variables that influence the direction and size of context effects, we are hopeful that the general mental construal principles of the IEM will provide a useful framework for their conceptualization.

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Index

A

- Aboutness filter, IEM, 330
 - contrast effects, 333–334
 - influence, awareness, 331–333
- Abstract level, social values
 - component facilitation test (CFT), 21–22
 - dejection *vs.* agitation, 22–23
 - primacy, 19–21
- Active self-concept, 264
- Agitation-orientated emotions, 22–23
- Allport–Vernon–Lindzey model, 4
- Appeasement emotions
 - competitive situations, 76–77
 - cooperative situations, 69–70
- Authentic integrating self, 104
- Autonomous internalization, 110
- Avoidance motivation, 202

B

- Broaden-and-build model, 128, 206–207, 238

C

- Capitalization on positive events
 - appetitive and aversive relationship processes, 202–203
 - approach and avoidance motivation, 202
 - beneficial responses, nature of
 - ambivalence, 240–242
 - bidirectionality, 244–245
 - conflict, 244
 - perceived responsiveness, 239–240
 - self-esteem, 243
 - expansion of benefits, 199
 - future research directions, 245–247
 - interpersonal outcomes and
 - actual behavior, 233–234
 - experimental studies, 234–236
 - feelings of acceptance, 230
 - intimacy relationships, 231–232
 - perceived responsiveness, 236–238
 - positive emotions, 238–239
 - intrapersonal outcomes and
 - capitalization attempts and perceived responses, 222–225
 - coping strategies, 229
 - maximizing event value, 225–228
 - memorability mechanism, 228–229
 - model of
 - interpersonal strategy, 212
 - positive events and capitalization attempts, 213
 - responses to capitalization attempts, 214
 - as novel research area, 204–205
 - partner responses to, 208–210
 - positive and negative affect, 200–201
 - self-evaluation maintenance (SEM)
 - processes, 204
 - sharing positive events, 198–199
 - accommodation responses, 218
 - active–constructive response, 218
 - active–destructive response, 219
 - with close others, 216
 - determination, 214–215
 - frequencies, 215–216
 - measuring responses, 219–222
 - passive–constructive response, 218–219
 - passive–destructive response, 219
 - perceptions of reactions, 216–217
 - social support and, 203–204
 - theoretical model, 206–214
 - well-being and mental health, 198
- Chronic self-concept, 264
 - accessibility, 277–279
 - self-concept consistency
 - actual and desired representations, 280–281
 - ambivalence, 279
- Circular model of values (Schwartz), 4–5
- Component Facilitation Test (CFT), 21–22
- Controlled internalization processes, 110–111
- Conversational relevance filter, IEM
 - common ground and standards
 - construction, 350–352
 - conversational redundancy avoidance, 348–350
 - research procedures, inferences, 352–353

D

- Dejection-orientated emotions, 22–23
- Discrete emotions

- cooperative *vs.* competitive settings
 - appeasement emotions, 61
 - dominance and aggression signs, 60
 - dominant behavioral reactions, 58–59
 - emotional contagion, 57
 - opportunity and affiliation signs, 59–60
 - positive goal-congruent emotions, 59

- Discrete emotions (*cont.*)
 recipient's action tendencies, 57–59
 supplication emotions, 60–61
 sense-making and signaling functions, 51–52
- Dualistic model of passion (DMP)
 activity engagement, 103
 harmonious passion, 103–104
 initial development, 109–114
 autonomous personality orientation,
 111–112
 autonomous *vs.* controlled personality, 112
 discriminant function analysis, 111
 personal factors, 112–114
 selection, valuation and internalization,
 109–110
 Self-Determination theory, 110–111
 structural equation modeling analysis,
 111–113
- initial research
 bifactorial structure and confirmatory factor
 analysis, 107
 harmonious and obsessive subscales,
 107–109
 internal consistency analyses, 109
 partial correlations, 109
 passion scale, 106–107
 test–retest correlations, 109
- integrative research
 coherent sequence, 155
 personal determinants and outcomes,
 157–162
 social determinants and outcomes, 155–157
- intergroup outcomes
 ego-invested self-structures, 151
 hooliganism, 151
 team achievement, 150
- internalization process
 performance assessment and self-affirmation,
 172–177
 subjective well-being, 162–168
 threat source, 169–172
- internalization, self-esteem, 102
- interpersonal relationships
 athletes' harmonious passion, 144–145
 dyadic adjustment scale, 148
 passion–conflict–couple relationship,
 146–147
 perceived relationship quality components
 inventory, 148
 quality of relationships, 144
 romantic relationship, 147–148
- intrapersonal consequences
 addictive behaviors, 133–135
 affective processes, 122–126
 cognitive processes, 119–122
 expert performance, 139–143
 physical health, 135–139
 psychological well-being, 126–133
- obsessive passion, 103
- on-going development
 personal determinants, 116–118
 social determinants, 114–116
- psychology
 definitional elements and concept, 100
 dual perspective, 100–101
 harmonious passion, 103–104
 obsessive passion, 102–103
 passion, definition, 102
 related constructs, 104–106
- research issues
 harmonious *vs.* obsessive passion, 181–182
 nonpassionate individuals, 182
 from obsessive to harmonious passion,
 179–180
 passionate activity retirement, 183
 progression perceptions, 180–181
 stages, 178–179
 transmission, 177–178
- self-defining activity, 102
- societal outcomes
 behavioral intentions, 154
 environmentalist workers and volunteers,
 153–154
 mainstream and extreme behaviors,
 153–155
 MANOVA, 152
 Quebec society contributors, 152–153
- Dyadic adjustment scale, 148

E

- Emotional intelligence, recognition and
 regulation, 83–84
- Emotions as social information (EASI) model
 affective reactions
 affect infusion, 54–55
 dual functions, inferential processes, 55–56
 emotional contagion, 54
 inferential processes and, 55–56
 mood maintenance, 55
- discrete emotions
 cooperative *vs.* competitive settings, 56–61
 sense-making and signaling functions,
 51–52
- epistemic motivation
 situational constraints, 62–63
 social decision making, 62
- future research
 emotional intelligence, 83–84
 integral *vs.* incidental emotions, 84
 mixed emotions, 84–85
 moving away tendencies, 85–86
- inferential processes
 affective reactions and, 55–56
 anger, 53
 counterpart's emotional expressions, 53–54

- interpersonal effects
 - competitive situations, 71–79
 - cooperative situations, 64–71
 - intrapersonal effects, 47
 - past research and present article, concerns, 47–49
 - social context, 48
 - social decision making
 - competitive and cooperative situations, 50–51
 - coordination and agreement situations, 50
 - interdependence structures, 49–50
 - social interactions, 47
 - theoretical implications
 - in competitive settings, 80
 - in cooperative settings, 80
 - discrete emotions, 80–83
 - evolution, 81–82
 - Emotions, interpersonal effects
 - competitive situations
 - appeasement emotions, 77
 - counterpart's expression, 78
 - dominance and aggression signs, 73–75
 - emerging patterns, 77–79
 - opportunity and affiliation signs, 72–73
 - supplication emotions, 76–77
 - cooperative situations
 - appeasement emotions, 69–70
 - dominance and aggression signs, 65–67
 - emerging patterns, 70–71
 - inferential processes, 70
 - moving away, 71
 - opportunity and affiliation signs, 64–65
 - partner's emotions, 71
 - supplication emotions, 68–69
 - Epistemic motivation, 62–63
 - Extreme behaviors, 153–155, 157, 169, 172
- H**
- Hierarchical linear modeling (HLM) analyses, 164
 - Higgins's theory, 22–23
- I**
- Ideal self-guides, 22–23
 - Inclusion/exclusion model (IEM)
 - affective responses, 323–324
 - assimilation/contrast effects, 320–322, 360–363
 - categorization process, 321
 - comparison-based contrast effects, 323
 - experiential information, 323
 - individualistic *vs.* collectivistic mind sets, 358–359
 - information accessibility, 324–325
 - information use, 325–329
 - aboutness filter, 330–334
 - coda, 353–354
 - conversational relevance, 348–353
 - representativeness filter, 334
 - primacy effects, 321
 - processing capacity and motivation, 354–356
 - processing style differences, 356–358
 - cognitive tuning, 357–358
 - local *vs.* global processing, 357
 - size of context effects, 329–330
 - subtraction-based contrast effects, 322
 - Instantiation level, social values
 - typicality effects
 - egalitarian behavior, 28
 - perceptual readiness, 29
 - value elaboration effects, 25–27
 - Integral *vs.* incidental emotions, 84
 - Integrative research model
 - coherent sequence, 155
 - personal determinants and outcomes
 - autonomous *vs.* controlled personality, 157–158
 - internalization, 160–161
 - intrinsic *vs.* extrinsic values, 158
 - personal growth and structural equation modeling analyses, 161
 - romantic passion scale, 161
 - self-expansion/self-constriction model, 159–161
 - social determinants and outcomes
 - findings and autonomy support, 157
 - transactional leadership and the market culture, 155
 - Internalization process
 - performance assessment and self-affirmation
 - covariance analysis, 174
 - ego-invested self-structures, 173–174
 - identity threat manipulations, 175
 - P–E fit, 176
 - personal competence, 173
 - positive information reception, 172
 - Self-Affirmation theory, 176–177
 - subjective well-being
 - adaptive processes, 168
 - hierarchical linear modeling (HLM) analyses, 163–165
 - P–E Fit analyses, 166–167
 - variance analyses, 163
 - threat source
 - correlational analyses, 172
 - driving simulation, 171
 - passion and aggression relation, 169–170
 - Intrapersonal consequences, passion, 156–157
 - addictive behaviors
 - canonical correlation, 135
 - discriminant analysis and group membership, 134
 - excessive gaming and eudaimonic well-being, 135
 - internet usage, 134–135

Intrapersonal consequences, passion (*cont.*)
 pathological gambling, 133–134

affective processes

long-term effects, 125–126
 positive and negative effect, 123–124
 self-validation, 124
 situational affective experiences, 125
 task engagement, 122–123

cognitive processes

concept of interest, 120
 decision-making, 120–121
 ego-invested processes, 119
 partial correlations, 120–121
 research, English soccer fans, 119
 rumination and negative
 anticipatory effects, 120

self-threat, 121–122

expert performance

achievement goals, 141
 achievement goals scale, 141–142
 dramatic art performance, 140–141
 natural talent, 139
 obsessive and harmonious engagement
 process, 143

path analysis, 142–143

physical health research

online gaming, 137
 passion–injury relation, 137–138
 risky fitness behavior, cyclists, 135–136

psychological well-being

Broaden-and-Build theory, 128
 cross-lagged panel design, 132–133
 hedonic and eudaimonic well-being,
 127–128
 life satisfaction and vitality, 126
 obsessive passion–psychological well-being
 relationship, 129–130
 passionate *vs.* nonpassionate individuals,
 126–127
 path analysis, 129
 recovery experience questionnaire, 131
 rumination and recovery activities, 131–132
 satisfaction and positive affective
 experiences, 129
 structural equation modeling analysis,
 130–131

M

Mainstream behaviors, 153–155, 157

Memorability, 228–229

Mixed emotions, 84–85

N

Negative emotions, 200–201

Negative events

coping processes, 197
 frequencies, 198

response to capitalization, 199
 social support, 197–198

O

Obsessive passion–psychological well-being
 relationship, 129–130

On-going development, passion

personal determinants

global motivation scale, 118
 intrinsic and extrinsic values, 116–117
 passion evaluation over time, 118
 self-oriented perfectionism, 117–118
 structural equation modeling, 117

social determinants

autonomy support, 115–116
 important reasons, findings, 116
 organizational support, 114–115
 transformational leadership, 115

Online gaming, 137–138

Other-focus, prime-to-behavior effects

by decision-making situation, 298–299
 dispositional other-focus, 299–300
 in less interactive interpersonal context,
 300–303

person and situation perceptions, 303–306
 temporarily induced other focus, 297–298

Ought self-guides, 22–23

P

Passionate functioning. *See* Internalization process

Passion–conflict–couple relationship, 146–147

Passion, life activities. *See* Dualistic model of
 passion (DMP)

The Passions of the Soul, 101

Perceived relationship quality components
 inventory, 148–149

Perceived responsiveness, 236–238

Performance-avoidance goals, 141

Person–Environment Fit (P–E) analyses, 166

Person–perception account, of prime-to-behavior
 effects

hostility and kindness concepts, 283
 moderating variables
 dispositional competitiveness, 286–290
 opportunity for reciprocity, 286
 prime extremity, 285
 perception effects on social interactions, 282
 prime effects on perceptions and behavior,
 283–284

Portrait Value Questionnaire (PVQ), 8

Positive emotions, 200–201, 238–239

Positive events, capitalization

expansion of benefits, 199
 frequencies, 198
 individual well-being and, 206
 partner responses to capitalization attempts,
 208–210

- positive affect and, 206–207
 - reaction to, 197
 - self-concept and, 207–208
 - sharing, 198–199
 - sharing positive events, 198–199
 - with close others, 216
 - determination, 214–215
 - frequencies, 215–216
 - perceptions of reactions, 216–217
 - reactions to capitalization attempts, 217–222
 - well-being and mental health, 198, 206
 - Positive goal-congruent emotions, 48–49
 - Pride, 208
 - Prime-to-behavior effects, indirect
 - consciousness, 307–308
 - direct accounts and
 - goal-activation accounts, 262
 - perception–behavior link, 261–262
 - sequential, 262
 - moderation of mechanisms, 294
 - dispositional other-focus, 299–300
 - other-focus by decision-making situation, 298–299
 - other-focus role in less interactive interpersonal context, 300–303
 - person and situation perceptions, 303–306
 - self-focus, 295–296
 - temporarily induced other focus, 297–298
 - person-perception account
 - dispositional competitiveness, 286–290
 - hostility and kindness concepts, 283
 - opportunity for reciprocation, 286
 - perception effects on social interactions, 282
 - prime effects on perceptions and behavior, 283–284
 - prime extremity, 285
 - self-perception account
 - active self-concept, 264
 - chronic self-concept, 264
 - moderating variables, 266
 - prime-induced self-concept, 264–266
 - situation-perception account
 - moderating factors of priming effects, 292–294
 - prime effects on situational construal and behavior, 291–292
 - Priming effects, 15–17
 - Private self-consciousness, 275–277
 - Psychology, passion
 - definitional elements and concept, 100
 - DMP
 - activity engagement, 103
 - harmonious passion, 103–104
 - internalization, self-esteem, 102
 - obsessive passion, 103
 - self-defining activity, 102
 - duality
 - positive inherent behavior, 101
 - reason and control, 100–101
 - related constructs
 - adaptive and maladaptive outcomes, 105
 - intrinsic motivation, 106
 - passion for work, 104–105
 - persistence, 105
- ## R
- Representativeness filter, IEM
 - accessibility and interpretations of ambiguous information, 346–348
 - category boundaries, 345–346
 - category structure, context information implications, 341–342
 - lateral to the target, 338–340
 - subordinate to the target, 337–338
 - superordinate to the target, 340–341
 - heterogeneity and mutability, 345
 - manipulation, 334–337
 - typicality, similarity and feature overlap
 - similarity and dissimilarity testing, 344–345
 - stereotype change, implications, 342–343
 - Responsiveness, partner
 - attachment theory, 211–212
 - for relationship development, 211
 - validation, 211
 - vs.* control, 212
 - Rokeach's theory, 4
 - Romantic passion scale, 161
- ## S
- Schwartz's circular model, 4
 - Schwartz's Value Survey (SVS), 5, 7
 - Self-Affirmation theory, 173, 176–177
 - Self-affirmation theory, 34
 - Self-Determination theory, 110–111
 - Self-discrepancy theory, 24
 - Self-evaluation maintenance (SEM) processes, 204
 - Self-expansion/self-constriction model, 161
 - Self-focus, prime-to-behavior effects, 295–296
 - Self-guides, 22–23
 - Self-oriented perfectionism, 117
 - Self-perception account, of prime-to-behavior effects
 - active self-concept, 264
 - chronic self-concept, 264
 - accessibility, 277–279
 - self-concept consistency, 279–281
 - distinctiveness from prime
 - identity distinctiveness, 267–270
 - stereotype *versus* exemplar primes, 266–267
 - prime-induced self-concept, 264–266
 - processing orientation
 - perspective taking, 270–272
 - private self-consciousness, 275–277
 - self-monitoring, 272–275
 - Self-related affect, 122–125, 155

- Single Category Implicit Association Test (SC-IAT), 32
 - Sinusoidal pattern, 7
 - Situation-perception account, of prime-to-behavior effects
 - moderating factors of priming effects
 - ambiguity of situation, 292
 - explicitly construing situation, 293–294
 - prime effects on situational construal and behavior, 291–292
 - Social decision making
 - competitive and cooperative situations, 50–51
 - coordination and agreement situations, 50
 - interdependence structures, 49–50
 - Social values, mental representations
 - abstract level
 - Component Facilitation Test (CFT), 21–22
 - dejection *vs.* agitation, 22–23
 - primacy, 19–21
 - coda, 36
 - conceptualization and operationalization
 - abstract ideals, 3–4
 - Allport–Vernon–Lindzey model, 4
 - Portrait Value Questionnaire (PVQ), 8
 - Rokeach's theory, 4
 - Schwartz's circular model, 4–5
 - Schwartz's Value Survey (SVS), 5–7
 - cross-cultural differences, 30–31
 - goals, attitudes, and traits, 32–33
 - instantiation level
 - typicality effects, 27–29
 - value elaboration effects, 25–27
 - levels of, 9–10
 - measurement methods, 31–32
 - moral judgment and, 34–35
 - psychological theories, 2–3
 - ratings of values, 8–9
 - self-affirmation theory, 34
 - shared values, 2
 - system level
 - accessibility, 11–12
 - feelings of ambivalence, 14–15
 - priming effects, 15–17
 - rhetoric judgment, 12–13
 - value change, 17–18
 - Sociometer theory, 208
 - Structural equation modeling analysis, 111–113
 - Supplication emotions
 - competitive situations, 76–77
 - cooperative situations, 68–69
 - System level, social values
 - accessibility, 11–12
 - feelings of ambivalence, 14–15
 - priming effects
 - achievement and benevolence values, 16
 - self-enhancing motive, 16
 - rhetoric judgment
 - covalue argumentation, 12–13
 - orthogonal or opposing motives, 13
 - value change, 17–18
- T**
- Transactional leadership, 155
- U**
- Ultimatum bargaining game (UBG), 50
- V**
- Value measurement methods, 31–32

CONTENTS OF OTHER VOLUMES

Volume 1

- Cultural Influences upon Cognitive Processes
Harry C. Triandis
- The Interaction of Cognitive and
Physiological Determinants of Emotional
State
Stanley Schachter
- Experimental Studies of Coalition Formation
William A. Gamson
- Communication Networks
Marvin E. Shaw
- A Contingency Model of Leadership
Effectiveness
Fred E. Fiedler
- Inducing Resistance to Persuasion: Some
Contemporary Approaches
William J. McGuire
- Social Motivation, Dependency, and
Susceptibility to Social Influence
Richard H. Walters and Ross D. Purke
- Sociability and Social Organization in
Monkeys and Apes
William A. Mason
- Author Index—Subject Index

Volume 2

- Vicarious Processes: A Case of No-Trial
Learning
Albert Bandura
- Selective Exposure
Jonathan L. Freedman and David O. Sears
- Group Problem Solving
L. Richard Hoffman
- Situational Factors in Conformity
Vernon L. Allen
- Social Power
John Schopler

- From Acts to Dispositions: The Attribution
Process in Person Perception
Edward E. Jones and Keith E. Davis
- Inequality in Social Exchange
J. Stacy Adams
- The Concept of Aggressive Drive: Some
Additional Considerations
Leonard Berkowitz
- Author Index—Subject Index

Volume 3

- Mathematical Models in Social Psychology
Robert P. Abelson
- The Experimental Analysis of Social
Performance
Michael Argyle and Adam Kendon
- A Structural Balance Approach to the
Analysis of Communication Effects
N. T. Feather
- Effects of Fear Arousal on Attitude Change:
Recent Developments in Theory and
Experimental Research
Irving L. Janis
- Communication Processes and the Properties
of Language
Serge Moscovici
- The Congruity Principle Revisited: Studies in
the Reduction, Induction, and
Generalization of Persuasion
Percy H. Tannenbaum
- Author Index—Subject Index

Volume 4

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A Current Perspective
Elliot Aronson

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Donn Byrne

Sociolinguistics

Susan M. Ervin-Tripp

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Nico H. Frijda

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Edward E. Sampson

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Ezra Stotland

The Personal Reference Scale: An Approach to Social Judgment

Harry S. Upshaw

Author Index—Subject Index

Volume 5

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A Review of Experimental Research

Richard E. Goranson

Studies in Leader Legitimacy, Influence, and Innovation

Edwin P. Hollander and James W. Julian

Experimental Studies of Negro-White Relationships

Irwin Katz

Findings and Theory in the Study of Fear Communications

Howard Leventhal

Perceived Freedom

Ivan D. Steiner

Experimental Studies of Families

Nancy E. Waxler and Elliot G. Mishler

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Kenneth L. Dion, Robert S. Baron, and Norman Miller

Author Index—Subject Index

Volume 6

Self-Perception Theory

Daryl J. Bem

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Leonard Berkowitz

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Albert J. Lott and Bernice E. Lott

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Serge Moscovici and Claude Faucheux

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Charlan Nemeth

Structural Representations of Implicit Personality Theory

Seymour Rosenberg and Andrea Sedlak

Author Index—Subject Index

Volume 7

Cognitive Algebra: Integration Theory Applied to Social Attribution

Norman A. Anderson

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Erika Apfelbaum

Physical Attractiveness

Ellen Bersheid and Elaine Walster

Compliance, Justification, and Cognitive Change

Harold B. Gerard, Edward S. Connolly, and Roland A. Wilhelmy

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Walter Mischel

Helping a Distressed Person: Social, Personality, and Stimulus Determinants

Ervin Staub

Author Index—Subject Index

Volume 8

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Vernon L. Allen

Group Tasks, Group Interaction Process, and Group Performance Effectiveness: A

Review and Proposed Integration

J. Richard Hackman and Charles G. Morris

The Human Subject in the Psychology

Experiment: Fact and Artifact

Arie W. Kruglanski

Emotional Arousal in the Facilitation of Aggression Through Communication

Percy H. Tannenbaum and Dolf Zillman

The Reluctance to Transmit Bad News

Abraham Tesser and Sidney Rosen

Objective Self-Awareness

Robert A. Wicklund

Responses to Uncontrollable Outcomes:
An Integration of Reactance Theory and
the Learned Helplessness Model
Camille B. Wortman and Jack W. Brehm
Subject Index

Volume 9

New Directions in Equity Research
*Elaine Walster, Ellen Berscheid, and
G. William Walster*
Equity Theory Revisited: Comments and
Annotated Bibliography
J. Stacy Adams and Sara Freedman
The Distribution of Rewards and Resources
in Groups and Organizations
Gerald S. Leventhal
Deserving and the Emergence of Forms
of Justice
*Melvin J. Lerner, Dale T. Miller, and
John G. Holmes*
Equity and the Law: The Effect of a
Harmdoer's "Suffering in the Act" on
Liking and Assigned Punishment
*William Austin, Elaine Walster, and
Mary Kristine Utne*
Incremental Exchange Theory: A Formal
Model for Progression in Dyadic Social
Interaction
L. Lowell Huesmann and George Levinger
Commentary
George C. Homans
Subject Index

Volume 10

The Catharsis of Aggression: An Evaluation
of a Hypothesis
Russell G. Geen and Michael B. Quany
Mere Exposure
Albert A. Harrison
Moral Internalization: Current Theory and
Research
Martin L. Hoffman
Some Effects of Violent and Nonviolent
Movies on the Behavior of Juvenile
Delinquents
*Ross D. Parke, Leonard Berkowitz,
Jacques P. Leyens, Stephen G. West,
and Richard Sebastian*

The Intuitive Psychologist and His
Shortcomings: Distortions in the
Attribution Process
Less Ross
Normative Influences on Altruism
Shalom H. Schwartz
A Discussion of the Domain and Methods of
Social Psychology: Two Papers by Ron
Harre and Barry R. Schlenker
Leonard Berkowitz
The Ethogenic Approach: Theory and
Practice
R. Harre
On the Ethogenic Approach: Etiquette and
Revolution
Barry R. Schlenker
Automatisms and Autonomies: In Reply
to Professor Schlenker
R. Harre
Subject Index

Volume 11

The Persistence of Experimentally Induced
Attitude Change
Thomas D. Cook and Brian F. Flay
The Contingency Model and the Dynamics of
the Leadership Process
Fred E. Fiedler
An Attributional Theory of Choice
Andy Kukla
Group-Induced Polarization of Attitudes and
Behavior
Helmut Lamm and David G. Myers
Crowding: Determinants and Effects
Janet E. Stockdale
Salience: Attention, and Attribution: Top of
the Head Phenomena
Shelley E. Taylor and Susan T. Fiske
Self-Generated Attitude Change
Abraham Tesser
Subject Index

Volume 12

Part I. Studies in Social Cognition
Prototypes in Person Perception
Nancy Cantor and Walter Mischel
A Cognitive-Attributional Analysis
of Stereotyping
David L. Hamilton

Self-Monitoring Processes

Mark Snyder

Part II. Social Influences and Social Interaction

Architectural Mediation of Residential Density and Control: Crowding and the Regulation of Social Contact

Andrew Baum and Stuart Valins

A Cultural Ecology of Social Behavior

J. W. Berry

Experiments on Deviance with Special

Reference to Dishonesty

David P. Farrington

From the Early Window to the Late Night Show: International Trends in the Study of Television's Impact on Children and Adults

John P. Murray and Susan Kippax

Effects of Prosocial Television and Film Material on the Behavior of Viewers

J. Phillippe Rushton

Subject Index

Volume 13

People's Analyses of the Causes of Ability-Linked Performances

John M. Darley and George R. Goethals

The Empirical Exploration of Intrinsic Motivational Processes

Edward I. Deci and Richard M. Ryan

Attribution of Responsibility: From Man the Scientist to Man as Lawyer

Frank D. Fincham and Joseph M. Jaspars

Toward a Comprehensive Theory of Emotion

Howard Leventhal

Toward a Theory of Conversion Behavior

Serge Moscovici

The Role of Information Retrieval and Conditional Inference Processes in Belief Formation and Change

Robert S. Wyer, Jr. and Jon Hartwick

Index

Volume 14

Verbal and Nonverbal Communication of Deception

Miron Zuckerman, Bella M. DePaulo, and Robert Rosenthal

Cognitive, Social, and Personality Processes in the Physiological Detection of Deception

William M. Waid and Martin T. Orne

Dialectic Conceptions in Social Psychology: An Application to Social Penetration and Privacy Regulation

Irwin Altman, Anne Vinsel, and Barbara B. Brown

Direct Experience and Attitude-Behavior Consistency

Russell H. Fazio and Mark P. Zanna

Predictability and Human Stress: Toward a Clarification of Evidence and Theory

Suzanne M. Miller

Perceptual and Judgmental Processes in Social Contexts

Arnold Upmeyer

Jury Trials: Psychology and Law

Charlan Jeanne Nemeth

Index

Volume 15

Balance, Agreement, and Positivity in the Cognition of Small Social Structures

Walter H. Crockett

Episode Cognition: Internal Representations of Interaction Routines

Joseph P. Forgas

The Effects of Aggressive-Pornographic Mass Media Stimuli

Neil M. Malamuth and Ed Donnerstein

Socialization in Small Groups: Temporal Changes in Individual-Group Relations

Richard L. Moreland and John M. Levine

Translating Actions into Attitudes: An Identity-Analytic Approach to the Explanation of Social Conduct

Barry R. Schlenker

Aversive Conditions as Stimuli to Aggression

Leonard Berkowitz

Index

Volume 16

A Contextualist Theory of Knowledge: Its Implications for Innovation and Reform in Psychological Research

William J. McGuire

Social Cognition: Some Historical and
Theoretical Perspectives

Janet Landman and Melvin Manis

Paradigmatic Behaviorism: Unified Theory
for Social-Personality Psychology

Arthur W. Staats

Social Psychology from the Standpoint of a
Structural Symbolic Interactionism: Toward
an Interdisciplinary Social Psychology

Sheldon Stryker

Toward an Interdisciplinary Social
Psychology

Carl W. Backman

Index

Volume 17

Mental Representations of Self

John F. Kihlstrom and Nancy Cantor

Theory of the Self: Impasse and Evolution

Kenneth J. Gergen

A Perceptual-Motor Theory of Emotion

Howard Leventhal

Equity and Social Change in Human
Relationships

Charles G. McClintock, Roderick M.

Kramer, and Linda J. Keil

A New Look at Dissonance Theory

Joel Cooper and Russell H. Fazio

Cognitive Theories of Persuasion

Alice H. Eagly and Shelly Chaiken

Helping Behavior and Altruism: An Empirical
and Conceptual Overview

John F. Dovidio

Index

Volume 18

A Typological Approach to Marital
Interaction: Recent Theory and Research

Mary Anne Fitzpatrick

Groups in Exotic Environments

Albert A. Harrison and Mary M. Connors

Balance Theory, the Jordan Paradigm, and
the Wiest Tetrahedon

Chester A. Insko

The Social Relations Model

David A. Kenny and Lawrence La Voie

Coalition Bargaining

S. S. Komorita

When Belief Creates Reality

Mark Snyder

Index

Volume 19

Distraction-Conflict Theory: Progress and
Problems

Robert S. Baron

Recent Research on Selective Exposure to
Information

Dieter Frey

The Role of Threat to Self-Esteem and
Perceived Control in Recipient Reaction to
Help: Theory Development and Empirical
Validation

Arie Nadler and Jeffrey D. Fisher

The Elaboration Likelihood Model of
Persuasion

Richard E. Petty and John T. Cacioppo

Natural Experiments on the Effects of Mass
Media Violence on Fatal Aggression:
Strengths and Weaknesses of a New
Approach

David P. Phillips

Paradigms and Groups

Ivan D. Steiner

Social Categorization: Implications for
Creation and Reduction of

Intergroup Bias

David A. Wilder

Index

Volume 20

Attitudes, Traits, and Actions: Dispositional
Prediction of Behavior in Personality and
Social Psychology

Icek Ajzen

Prosocial Motivation: Is It Ever Truly
Altruistic?

C. Daniel Batson

Dimensions of Group Process: Amount and
Structure of Vocal Interaction

James M. Dabbs, Jr. and R. Barry Ruback

The Dynamics of Opinion Formation

Harold B. Gerard and Ruben Orive

Positive Affect, Cognitive Processes, and
Social Behavior

Alice M. Isen

Between Hope and Fear: The Psychology of Risk

Lola L. Lopes

Toward an Integration of Cognitive and Motivational Perspectives on Social Inference: A Biased Hypothesis-Testing Model

Tom Pyszczynski and Jeff Greenberg

Index

Volume 21

Introduction

Leonard Berkowitz

Part I. The Self as Known

Narrative and the Self as Relationship

Kenneth J. Gergen and Mary M. Gergen

Self and Others: Studies in Social Personality and Autobiography

Seymour Rosenberg

Content and Process in the Experience of Self

William J. McGuire and Claire V. McGuire

Information Processing and the Study of the Self

John F. Kihlstrom, Nancy Cantor,

Jeanne Sumi Albright, Beverly R. Chew,

Stanley B. Klein, and Paula M. Niedenthal

Part II. Self-Motives

Toward a Self-Evaluation Maintenance

Model of Social Behavior

Abraham Tesser

The Self: A Dialectical Approach

Carl W. Backman

The Psychology of Self-Affirmation:

Sustaining the Integrity of the Self

Claude M. Steele

A Model of Behavioral Self-Regulation:

Translating Intention into Action

Michael F. Scheier and Charles S. Carver

Index

Volume 22

On the Construction of the Anger Experience:

Aversive Events and Negative Priming in the Formation of Feelings

Leonard Berkowitz and Karen Heimer

Social Psychophysiology: A New Look

John T. Cacioppo, Richard E. Petty, and

Louis G. Tassinary

Self-Discrepancy Theory: What Patterns of Self-Beliefs Cause People to Suffer?

E. Tory Higgins

Minding Matters: The Consequences of Mindlessness-Mindfulness

Ellen J. Langer

The Tradeoffs of Social Control and

Innovation in Groups and Organizations

Charlan Jeanne Nemeth and Barry M. Staw

Confession, Inhibition, and Disease

James W. Pennebaker

A Sociocognitive Model of Attitude Structure and Function

Anthony R. Pratkanis and

Anthony G. Greenwald

Introspection, Attitude Change, and

Attitude-Behavior Consistency: The

Disruptive Effects of Explaining Why We Feel the Way We Do

Timothy D. Wilson, Dana S. Dunn,

Dolores Kraft, and Douglas J. Lisle

Index

Volume 23

A Continuum of Impression Formation, from Category-Based to Individuating

Processes: Influences of Information and

Motivation on Attention and

Interpretation

Susan T. Fiske and Steven L. Neuberg

Multiple Processes by Which Attitudes Guide

Behavior: The MODE Model as an

Integrative Framework

Russell H. Fazio

PEAT: An Integrative Model of Attribution Processes

John W. Medcof

Reading People's Minds: A Transformation Rule Model for Predicting Others'

Thoughts and Feelings

Rachel Karniol

Self-Attention and Behavior: A Review and Theoretical Update

Frederick X. Gibbons

Counterfactual Thinking and Social

Perception: Thinking about What Might Have Been

Dale T. Miller, William Turnbull, and

Cathy McFarland

Index

Volume 24

The Role of Self-Interest in Social and Political Attitudes

David O. Sears and Carolyn L. Funk

A Terror Management Theory of Social Behavior: The Psychological Functions of Self-Esteem and Cultural Worldviews

Sheldon Solomon, Jeff Greenberg, and Tom Pyszczynski

Mood and Persuasion: Affective States Influence the Processing of Persuasive Communications

Norbert Schwarz, Herbert Bless, and Gerd Bohner

A Focus Theory of Normative Conduct: A Theoretical Refinement and Reevaluation of the Role of Norms in Human Behavior

Robert B. Cialdini, Carl A. Kallgren, and Raymond R. Reno

The Effects of Interaction Goals on Person Perception

James L. Hilton and John M. Darley

Studying Social Interaction with the Rochester Interaction Record

Harry T. Reis and Ladd Wheeler

Subjective Construal, Social Inference, and Human Misunderstanding

Dale W. Griffin and Lee Ross

Index

Volume 25

Universals in the Content and Structure of Values: Theoretical Advances and Empirical Tests in 20 Countries

Shalom H. Schwartz

Motivational Foundations of Behavioral Confirmation

Mark Snyder

A Relational Model of Authority in Groups

Tom R. Tyler and E. Allan Lind

You Can't Always Think What You Want: Problems in the Suppression of Unwanted Thoughts

Daniel M. Wegner

Affect in Social Judgments and Decisions: A Multiprocess Model

Joseph Paul Forgas

The Social Psychology of Stanley Milgram

Thomas Blass

The Impact of Accountability on Judgment and Choice: Toward a Social Contingency Model

Philip E. Tetlock

Index

Volume 26

Attitudes Toward High Achievers and Reactions to Their Fall: Theory and Research Concerning Tall Poppies

N. T. Feather

Evolutionary Social Psychology: From Sexual Selection to Social Cognition

Douglas T. Kenrick

Judgment in a Social Context: Biases, Short-comings, and the Logic of Conversation

Norbert Schwarz

A Phase Model of Transitions: Cognitive and Motivational Consequences

Diane N. Ruble

Multiple-Audience Problems, Tactical Communication, and Social Interaction: A Relational-Regulation Perspective

John H. Fleming

From Social Inequality to Personal Entitlement: The Role of Social Comparisons, Legitimacy Appraisals, and Group Membership

Brenda Major

Mental Representations of Social Groups: Advances in Understanding Stereotypes and Stereotyping

Charles Stangor and James E. Lange

Index

Volume 27

Inferences of Responsibility and Social Motivation

Bernard Weiner

Information Processing in Social Contexts: Implications for Social Memory and Judgment

Robert S. Wyer, Jr. and

Deborah H. Gruenfeld

The Interactive Roles of Stability and Level of Self-Esteem: Research and Theory

Michael H. Kernis and Stephanie B. Waschull

Gender Differences in Perceiving Internal
State: Toward a His-and-Hers Model of
Perceptual Cue Use
Tomi-Ann Roberts and James W. Pennebaker

On the Role of Encoding Processes in
Stereotype Maintenance
*William von Hippel, Denise Sekaquaptewa,
and Patrick Vargas*

Psychological Barriers to Dispute Resolution
Lee Ross and Andrew Ward

Index

Volume 28

The Biopsychosocial Model of Arousal
Regulation
Jim Blascovich and Joe Tomaka

Outcome Biases in Social Perception:
Implications for Dispositional Inference,
Attitude Change, Stereotyping, and Social
Behavior
*Scott T. Allison, Diane M. Mackie, and
David M. Messick*

Principles of Judging Valence: What Makes
Events Positive or Negative?
C. Miguel Brendl and E. Tory Higgins

Pluralistic Ignorance and the Perpetuation of
Social Norms by Unwitting Actors
Deborah A. Prentice and Dale T. Miller

People as Flexible Interpreters: Evidence
and Issues from Spontaneous Trait
Inference
*James S. Uleman, Leonard S. Newman, and
Gordon B. Moskowitz*

Social Perception, Social Stereotypes, and
Teacher Expectations: Accuracy and the
Quest for the Powerful Self-Fulfilling
Prophecy
*Lee Jussim Jacquelynne Eccles, and
Stephanie Madon*

Nonverbal Behavior and Nonverbal
Communication: What do Conversational
Hand Gestures Tell Us?
*Robert M. Krauss, Yihsiu Chen, and
Purnima Chawla*

Index

Volume 29

Counterfactual Thinking: The Intersection of
Affect and Function
Neal J. Roese and James M. Olson

Terror Management Theory of Self-Esteem
and Cultural Worldviews: Empirical
Assessments and Conceptual Refinements
*Jeff Greenberg, Sheldon Solomon, and
Tom Pyszczynski*

The Flexible Correction Model: The Role
of Naïve Theories of Bias in Bias
Correction
Duane T. Wegener and Richard E. Petty

Self-Evaluation: To Thine Own Self Be Good,
to Thine Own Self Be Sure, to Thine Own
Self Be True, and to Thine Own Self Be
Better
Constantine Sedikides and Michael J. Strube

Toward a Hierarchical Model of Intrinsic and
Extrinsic Motivation
Robert J. Vallerand

Volume 30

Promotion and Prevention: Regulatory
Focus as a Motivational Principle
E. Tory Higgins

The Other "Authoritarian Personality"
Bob Altemeyer

Person Preception Comes of Age: The
Salience and Significance of Age in Social
Adjustments
*Joann M. Montepare and Leslie
A. Zebrowitz*

On the Perception of Social Consensus
Joachim Krueger

Prejudice and Stereotyping in Everyday
Communication
Janet B. Ruscher

Situated Optimism: Specific Outcome
Expectancies and Self-Regulation
David A. Armor and Shelley E. Taylor

Volume 31

Affect and Information Processing
*Robert S. Wyer, Jr., Gerald L. Clore, and
Linda M. Isbell*

Linguistic Intergroup Bias:
Stereotype Perpetuation through
Language
Anne Maass

Relationships from the Past in the
Present: Significant-Other
Representations and Transference
in Interpersonal Life
Serena Chen and Susan M. Anderson

The Puzzle of Continuing Group Inequality:
Piecing Together Psychological, Social,
and Cultural Forces in Social
Dominance Theory

Felicia Pratto

Attitude Representation Theory

Charles G. Lord and Mark R. Lepper

Discontinuity Theory: Cognitive and Social
Searches for Rationality and Normality—
May Lead to Madness

Philip G. Zimbardo

Volume 32

The Nature and Function of Self-Esteem:
Sociometer Theory

Mark R. Leary and Roy F. Baumeister

Temperature and Aggression

Craig A. Anderson, Kathryn B. Anderson,

Nancy Dorr, Kristina M. DeNeve, and

Mindy Flanagan

The Importance of Being Selective: Weighing
the Role of Attribute Importance in
Attitudinal Judgment

Joop van der Pligt, Nanne K. de Vries,

Antony S. R. Manstead, and Frank

van Harreveld

Toward a History of Social Behavior:
Judgmental Accuracy from Thin Slices of
the Behavioral Stream

Nalini Ambady, Frank J. Bernieri, and

Jennifer A. Richeson

Attractiveness, Attraction, and Sexual
Selection: Evolutionary Perspectives on the
Form and Function of Physical

Attractiveness

Dianne S. Berry

Index

Volume 33

The Perception–Behavior Expressway:
Automatic Effects of Social Perception on
Social Behavior

Ap Dijksterhuis and John A. Bargh

A Dual-Process Cognitive-Motivational
Theory of Ideology and Prejudice

John Duckitt

Ambivalent Sexism

Peter Glick and Susan T. Fiske

Videotaped Confessions: Is Guilt in the Eye of
the Camera?

*G. Daniel Lassiter, Andrew L. Geers,
Patrick J. Munhall, Ian M. Handley, and
Melissa J. Beers*

Effort Determination of Cardiovascular
Response: An Integrative Analysis
with Applications in Social
Psychology

Rex A. Wright and Leslie D. Kirby

Index

Volume 34

Uncertainty Management by Means of
Fairness Judgments

Kees van den Bos and E. Allan Lind

Cognition in Persuasion: An Analysis of
Information Processing in Response to
Persuasive Communications

Dolores Albarracín

Narrative-Based Representations of Social
Knowledge: Their Construction and Use
in Comprehension, Memory, and
Judgment

Robert S. Wyer, Jr., Rashmi Adaval and

Stanley J. Colcombe

Reflexion and Reflection: A Social Cognitive
Neuroscience Approach to Attributional
Inference

Matthew D. Lieberman, Ruth Gaunt, Daniel

T. Gilbert, and Yaacov Trope

Antecedents and Consequences of
Attributions to Discrimination: Theoretical
and Empirical Advances

Brenda Major, Wendy J. Quinton, and

Shannon K. McCoy

A Theory of Goal Systems

Arie W. Kruglanski, James Y. Shah,

Ayelet Fishbach, Ron Friedman,

Woo Young Chun, and

David Sleeth-Keppler

Contending with Group Image: The
Psychology of Stereotype and Social
Identity Threat

Claude M. Steele, Steven J. Spencer, and

Joshua Aronson

Index

Volume 35

Social Identity and Leadership Processes
in Groups

Michael A. Hogg and Daan van Knippenberg

The Attachment Behavioral System in
Adulthood: Activation, Psychodynamics,
and Interpersonal Processes

Mario Mikulincer and Phillip R. Shaver

Stereotypes and Behavioral Confirmation:
From Interpersonal to
Intergroup Perspectives

Olivier Klein and Mark Snyder

Motivational Bases of Information
Processing and Strategy in Conflict
and Negotiation

Carsten K. W. De Dreu and

Peter J. Carnevale

Regulatory Mode: Locomotion and
Assessment as Distinct Orientations

*E. Tory Higgins, Arie W. Kruglanski,
and Antonio Pierro*

Affective Forecasting

Timothy D. Wilson and

Daniel T. Gilbert

Index

Volume 36

Aversive Racism

John F. Dovidio and Samuel L. Gaertner

Socially Situated Cognition: Cognition in its
Social Context

Eliot R. Smith and Gün R. Semin

Social Axioms: A Model for Social Beliefs in
Multicultural Perspective

Kwok Leung and Michael Harris Bond

Violent Video Games: Specific Effects of
Violent Content on Aggressive Thoughts
and Behavior

Craig A. Anderson, Nicholas L. Carnagey,

Mindy Flanagan, Arlin J. Benjamin, Jr.,

Janie Eubanks, and Jeffery C. Valentine

Survival and Change in Judgments: A Model
of Activation and Comparison

*Dolores Albarracín, Harry M. Wallace, and
Laura R. Glasman*

The Implicit Volition Model: On the
Preconscious Regulation of Temporarily
Adopted Goals

Gordon B. Moskowitz, Peizhong Li, and

Elizabeth R. Kirk

Index

Volume 37

Accuracy in Social Perception: Criticisms,
Controversies, Criteria, Components, and
Cognitive Processes

Lee Jussim

Over Thirty Years Later: A Contemporary
Look at Symbolic Racism

David O. Sears and P. J. Henry

Managing Group Behavior: The Interplay
Between Procedural Justice, Sense of Self,
and Cooperation

David De Cremer and Tom R. Tyler

So Right it's Wrong: Groupthink and the
Ubiquitous Nature of Polarized Group
Decision Making

Robert S. Baron

An Integrative Theory of Intergroup Contact

Rupert Brown and Miles Hewstone

Says Who?: Epistemic Authority Effects in
Social Judgment

Arie W. Kruglanski, Amiram Raviv,

Daniel Bar-Tal, Alona Raviv,

Keren Sharvit, Shmuel Ellis, Ruth Bar,

Antonio Pierro, and Lucia Mannetti

Index

Volume 38

Exploring the Latent Structure of
Strength-Related Attitude Attributes

*Penny S. Visser, George Y. Bizer,
and Jon A. Krosnick*

Implementation Intentions and Goal
Achievement: A Meta-Analysis of Effects
and Processes

Peter M. Gollwitzer and Paschal Sheeran

Interracial Interactions: A Relational
Approach

J. Nicole Shelton and Jennifer A. Richeson

The Psychology of Self-Defense:

Self-Affirmation Theory

David K. Sherman and Geoffrey L. Cohen

Intergroup Beliefs: Investigations from
the Social Side

Charles Stangor and Scott P. Leary

A Multicomponent Conceptualization of
Authenticity: Theory and Research

Michael H. Kernis and Brian M. Goldman

Index

Volume 39

Culture and the Structure of Personal
Experience: Insider and Outsider
Phenomenologies of the Self and Social
World

Dov Cohen, Etsuko Hoshino-Browne, and

Angela K.-y. Leung

Uncertainty–Identity Theory

Michael A. Hogg

Metacognitive Experiences and the Intricacies
of Setting People Straight: Implications for
Debiasing and Public Information
Campaigns

*Norbert Schwarz, Lawrence J. Sanna, Ian
Skurnik, and Carolyn Yoon*

Multiple Social Categorization

Richard J. Crisp and Miles Hewstone

On the Parameters of Human Judgment

*Arie W. Kruglanski, Antonio Pierro,
Lucia Mannetti, Hans-Peter Erb, and
Woo Young Chun*

Panglossian Ideology in the Service of
System Justification: How Complementary
Stereotypes Help Us to Rationalize
Inequality

*Aaron C. Kay, John T. Jost, Anesu N.
Mandisodza, Steven J. Sherman,
John V. Petrocelli, and Amy L. Johnson*

Feeling the Anguish of Others: A Theory of
Vicarious Dissonance

Joel Cooper and Michael A. Hogg

Index

Volume 40

The Commitment–Insurance System:
Self-Esteem and the Regulation
of Connection in Close
Relationships

Sandra L. Murray and John G. Holmes

Warmth and Competence as Universal
Dimensions of Social Perception:
The Stereotype Content Model and
the BIAS Map

*Amy J. C. Cuddy, Susan T. Fiske,
and Peter Glick*

A Reciprocal Influence Model of Social
Power: Emerging Principles and
Lines of Inquiry

*Dacher Keltner, Gerben A. Van Kleef, Serena
Chen, and Michael W. Kraus*

Psychological Aspects of Retributive Justice

Kevin M. Carlsmith and John M. Darley

Majority Versus Minority Influence,
Message Processing and Attitude Change:
The Source-Context-Elaboration Model

Robin Martin and Miles Hewstone

Index

Volume 41

The Introspection Illusion

Emily Pronin

Persuasion: Insights from the
Self-Validation Hypothesis

Pablo Briñol and Richard E. Petty

Action-Based Model of Dissonance: A
Review, Integration, and Expansion
of Conceptions of Cognitive Conflict

*Eddie Harmon-Jones, David M. Amodio,
and Cindy Harmon-Jones*

Affect as a Psychological Primitive

Lisa Feldman Barrett and Eliza Bliss-Moreau

Human Mimicry

Tanya L. Chartrand and Rick van Baaren

Ostracism: A Temporal Need-Threat Model

Kipling D. Williams

Index